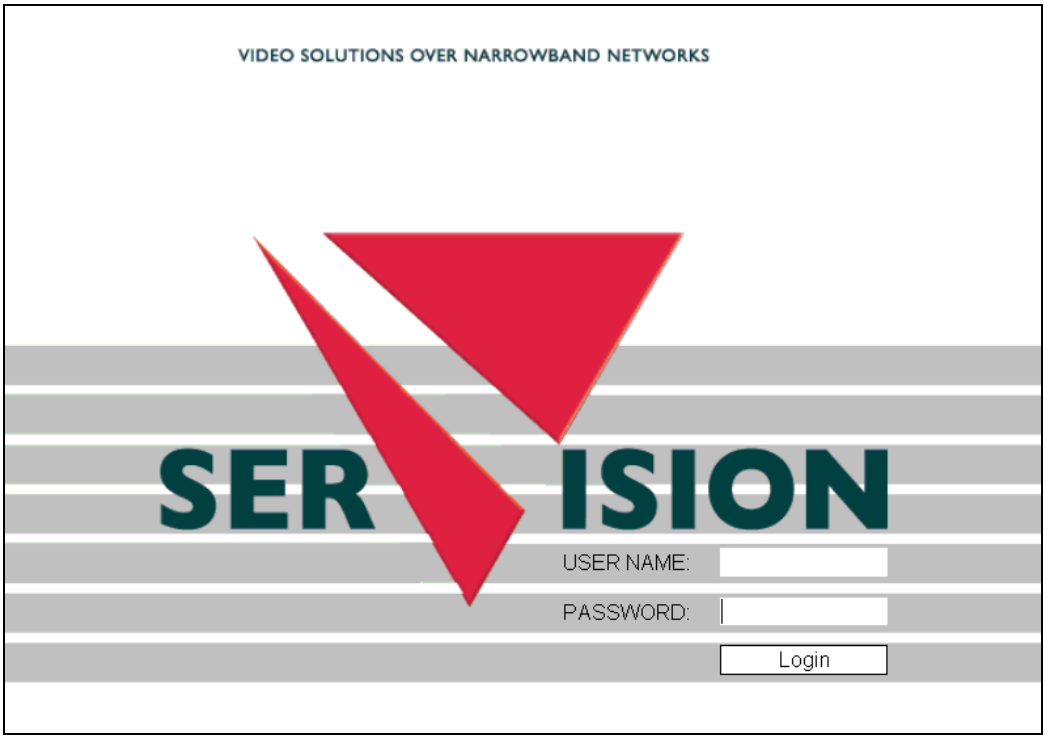
Embedded Video Gateway

System Guide



Configuration and management guide for SerVision
HVG, UVG, MVG, CVG, and CVG-M
Video Gateway models

SerVision

May
2012

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sw CVG: v 2.2.23.a10
sw 4-Channel: v 2.2.23.a75
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Getting Started

SerVision's embedded Video Gateways are compact Video Gateway units that provide state-of-the-art security functionality for a wide range of environments, from offices and homes to vehicles and other moving platforms. All units feature live video streaming, video recording and playback, motion detection, sensor management, and real-time event notification and device activation. These features can be accessed remotely via PC, PDA, or cellular telephone.

All Video Gateway units can connect to computer networks, including local networks and the internet, using cable-based Ethernet connections. Some models also support wireless network connections via cellular networks and WiFi.

The following embedded Video Gateway models are currently available:

- **HVG:** A four-channel Video Gateway optimized for homes and small offices. The HVG features a built-in hard drive capable of storing large quantities of recorded video and supports a cable-based connection to a network.
- **UVG:** A four-channel Video Gateway that is ideal for deployment in locations where cabled network connections are not available, such as building sites, parking lots, and horse stables. The UVG can connect to a network via Ethernet, cellular, or WiFi and contains a built-in hard drive capable of storing large quantities of recorded video.
- **MVG:** A four-channel Video Gateway designed for deployment in vehicles such as buses, trains, and delivery trucks. The MVG contains a removable hard drive capable of storing large quantities of recorded video. It can connect to cellular and wireless networks, and also supports GPS that enables remote users to locate and track the vehicle in which it is installed.
- **CVG:** A compact, two-channel Video Gateway optimized for streaming live video from indoor locations. The CVG includes an SD card that can store up to 96 hours of recorded video and can connect to cable-based networks.
- **CVG-M:** A compact, two-channel Video Gateway optimized for streaming live video from vehicles. The CVG-M can connect to cable-based and cellular networks, and also supports GPS that enables remote users to locate and track the vehicle in which it is installed. It includes an SD card that can store up to 96 hours of recorded video.

About this Guide

All Video Gateway models are configured using a browser-based configuration utility that is accessed via PC. This guide explains how to use the configuration utility to configure and manage an embedded Video Gateway unit. The guide assumes the unit is already installed in its intended location, all required devices are connected to it, and it is connected to a power source and a network. For information about installing your Video Gateway unit, please refer to its installation guide.

The following topics related to the configuration utility are covered in this manual:

- Configuring the unit (page 9)
- Connecting to the unit to check that the configuration settings are correct and to view video, snapshots, or event information (page 132)
- Resetting the unit (page 161)
- Diagnosing system problems (page 139)

This guide also includes information about system maintenance and handling problems:

- Upgrading the firmware (page 152)
- Restoring the factory settings of the unit (page 162)
- Troubleshooting (page 165)

Most embedded Video Gateway models can be used in conjunction with a CCTV monitor. The monitor can be used to view video from the cameras connected to the unit. Instructions for viewing video on a CCTV monitor are included in an Appendix to this guide (see *Appendix A: Viewing Video on a CCTV Monitor (TV-Out)*, page 170).

Because this guide relates to a number of different embedded Video Gateway models, certain parts of the manual are only relevant to specific models. Information that only relates to some of the models is color-coded in teal. For example, a paragraph that is only relevant to the MVG and CVG-M models would appear like this:

This paragraph only relates to the MVG and CVG-M models.

If an entire section is only relevant for particular models, in addition to the color-coding, the beginning and end of the section is marked and labels appear at the top of the section. The labels indicate the models for which the section is relevant. For example, a section that is only relevant to the MVG and CVG-M models would appear like this:

GPS

Only the MVG and CVG-M models support GPS position tracking.

Because the Video Gateway models have slightly different features, their configuration is different in some cases. Screenshots of the configuration utility that appear in this guide may be from a different model than the one you are configuring, and may therefore not exactly match the screens you see. If the screen that is displayed differs significantly from model to model, the name of the model from which the screenshot was taken appears in parentheses in the caption below the screenshot.

About Client Software

Client software is used for accessing the Video Gateway unit remotely in order to view video and events and control the system in various ways. This guide includes a general overview of the MultiClient, SerVision's PC-based client software. SerVision also offers client software for certain cellular telephone and PDA models. Full instructions for the use of the client applications are available in separate manuals:

- *MultiClient User Guide*
- *Windows Mobile Client (SVClientCE) User Guide*
- *Symbian S60 Client User Guide*
- *Symbian UIQ Client User Guide*

Contact your vendor if you require any of these manuals or download them at http://www.servision.net.

Before You Begin

Before the Video Gateway unit can be configured, the hardware should be set up as follows:

- The Video Gateway unit should be installed and connected to a power supply.
- All the cameras and optional devices (sensors, activators, etc.) should be connected to the Video Gateway unit and to their power supplies, as necessary.
- A PC should be on the same LAN as the Video Gateway or connected to the unit by a LAN cross cable.

There are two ways that you can connect a PC to the same LAN as an MVG or UVG:

- Using the supplied Ethernet (network) cable, connect the network connector of the PC to one of the **Ethernet In** connectors on the rear panel of the unit. The PC will then be included in the network managed by the router. (It is preferable to use this method the first time you connect to the unit, before it has been configured.)
- Using the supplied Ethernet (network) cable, connect the **Ethernet Out** connector on the rear panel of the unit to a LAN connection point. Connect the PC to the same LAN through a different connection point.

NOTE: Do not connect a LAN connection point to one of the **Ethernet In** connectors; if you do, the system will not function properly and will reset itself continuously.

Installing the MultiClient

The simplest way to open the Video Gateway's configuration utility is by using the MultiClient application on a PC that is on the same LAN as the Video Gateway (see *Before You Begin*, page 6). Thus, before you begin configuring the Video Gateway, you should install the MultiClient on the computer that you will use for the configuration tasks.

After the unit is configured, you can check the installation and configuration using the MultiClient you installed on the PC (see *Connecting to the Video* Gateway, page 132). If this is successful, you can then install the MultiClient on a remote computer and connect to the Video Gateway via the internet.

NOTE: This chapter explains how to get started using the MultiClient on a PC that is on the same LAN as the Video Gateway so that you can configure the system and make sure it is working properly. For complete information about connecting to the MultiClient, locally or remotely, and using the MultiClient to view video, monitor events, and control devices, please refer to the *MultiClient User Guide*.

To install the MultiClient application on the PC:

1. Download the latest version of the MultiClient installation program from the SerVision website (http://www.servision.net). The installation file is called **`Setup-MultiClient-SV-x.x.x.x.exe`** (The software version number appears in place of "`x.x.x.x`".)

2. Double-click the installation file. The setup program starts.

   Note: If a Microsoft Windows **Security Warning** dialog box is displayed, click **Run**.

3. Follow the on-screen instructions. The installation program consists of two installation wizards, one for the MultiClient itself and the other for the GPS map system (MapWinGIS). When the MultiClient installation program finishes, the MapWinGIS installation program opens automatically.

   Note: If your system does not include mobile Video Gateways with GPS capabilities (MVG or CVG-M units), you do not have to install the GPS map system package.

   When the installation is completed, a MultiClient application icon is placed on your desktop.

Figure 1: MultiClient desktop icon

Opening the MultiClient

The first time you open the MultiClient, you must choose whether to enable security. When security is enabled, access to the MultiClient is limited to authorized users; otherwise, it is available to anyone using the PC. At this stage, it is not necessary to enable security.

NOTE: You can enable security later if necessary. For information about MultiClient security settings, see the *MultiClient User Guide*.

To open the MultiClient:

1. Start the program by double-clicking the desktop icon or by selecting it in the **Start** menu (**`Start>Programs>SerVision>SVMultiClient>SVMultiClient`**).

   You are prompted to decide whether to enable security or not:

Figure 2: Enable security prompt

2. Select **No**. The MultiClient window opens.

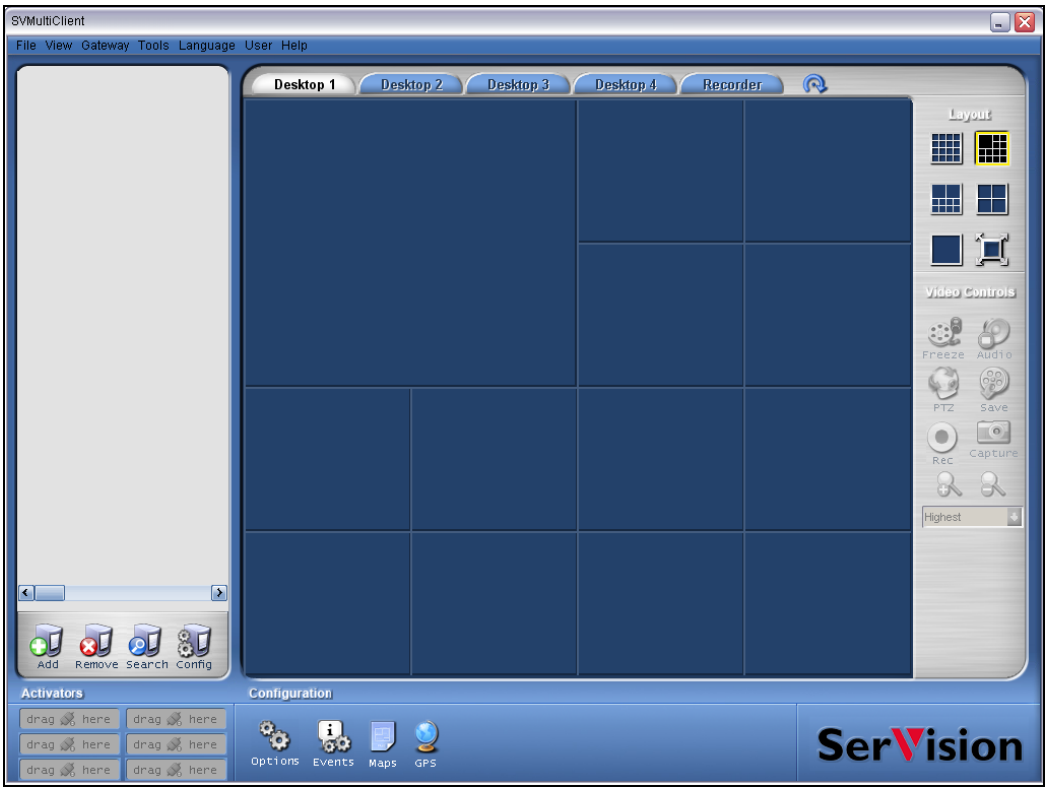


Figure 3: MultiClient window

Opening the Configuration Utility

This section explains how to work with the configuration utility – how to open it, access its main menu, and navigate to the various configuration screens. The menu options and their settings are described in detail in the following chapters.

When you first open the configuration utility, you should open it through the MultiClient, as explained in this section. This method of opening the configuration utility is recommended whenever the MultiClient is on a PC that is on the same network as the Video Gateway (or the PC and the Video Gateway are connected via a LAN cross cable).

No internet connection is required to configure the Video Gateway. Once the network settings of the unit have been configured in such a way that the unit can be accessed remotely via the internet, the configuration utility can also be accessed remotely. For additional information, see *Opening the Configuration Remotely*, page 15.

NOTE: The configuration utility is compatible with **Internet Explorer** and **Firefox**.

To open the configuration utility:

1. Open the MultiClient.
2. In the MultiClient, at the bottom of the **Connection Panel**, click the **Search** button.

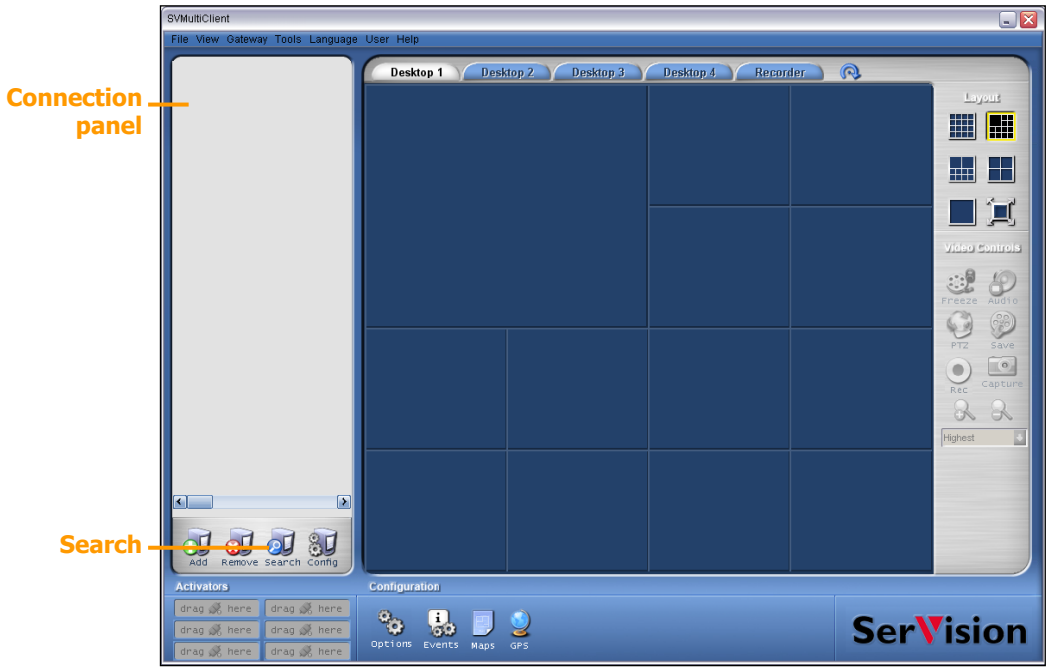


Figure 4: Search button

The **Find Gateway** dialog box opens, and displays a list of all the SerVision systems connected to the network.

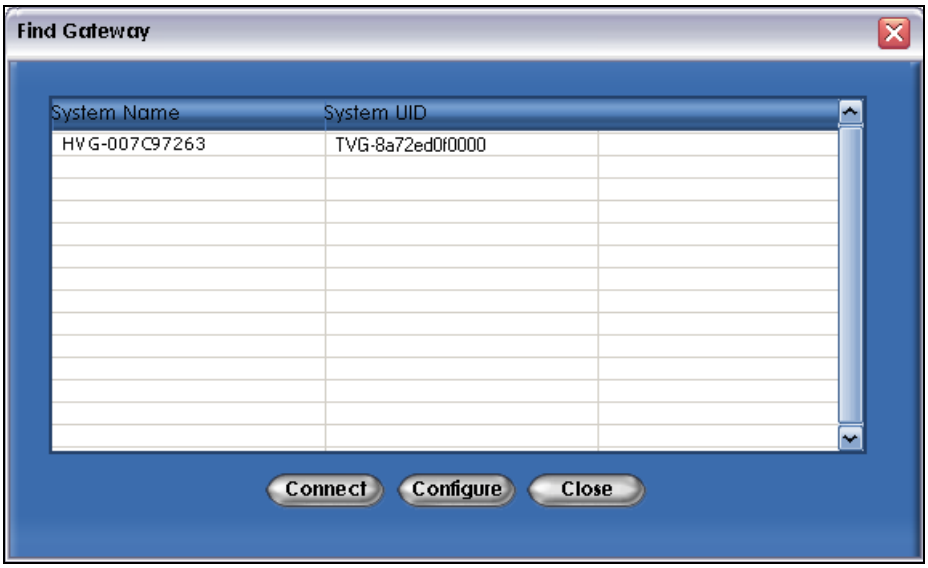


Figure 5: Find Gateway dialog box

Note: It may take a few minutes before the Video Gateway unit appears in the list.

3. Select the Video Gateway and then click **Configure**. A browser window opens and displays the configuration **Login** screen.

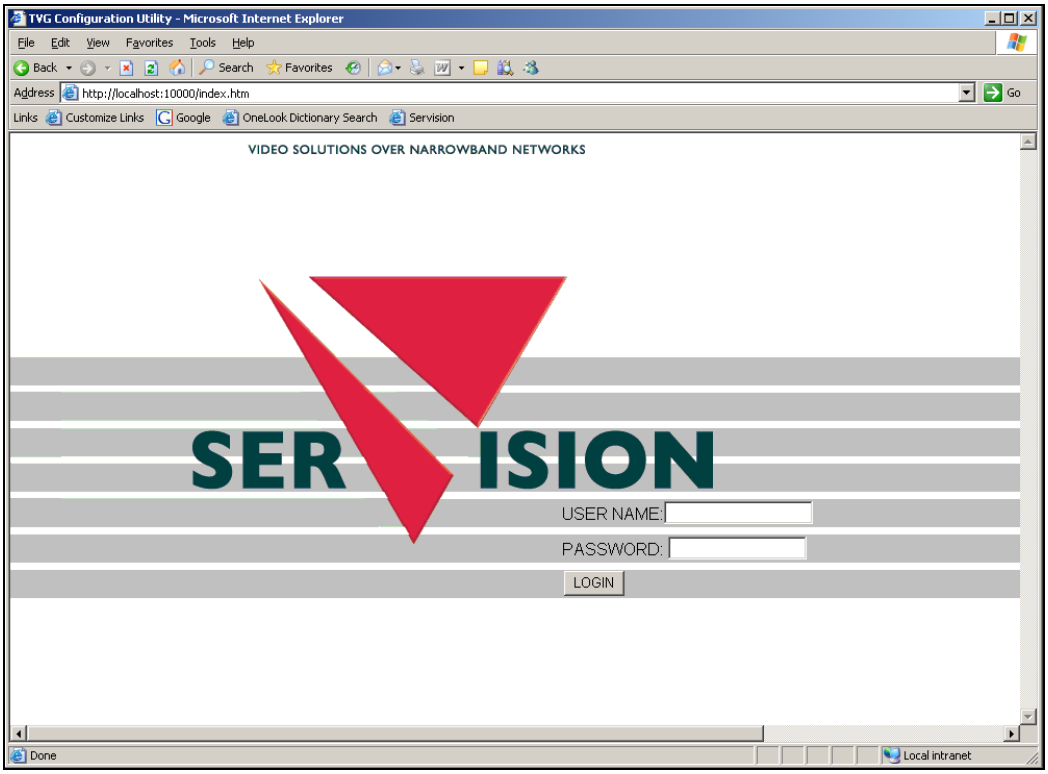


Figure 6: Login screen

4. Fill in the **User Name** and **Password** fields.

   Note: By default, the username is **`svuser`** and the password is **`servconf`**. Use these values the first time you log into the configuration utility. Once you have logged in, it is recommended that you change these values (see *Authentication*, page 57).

   The **System Summary** screen opens:

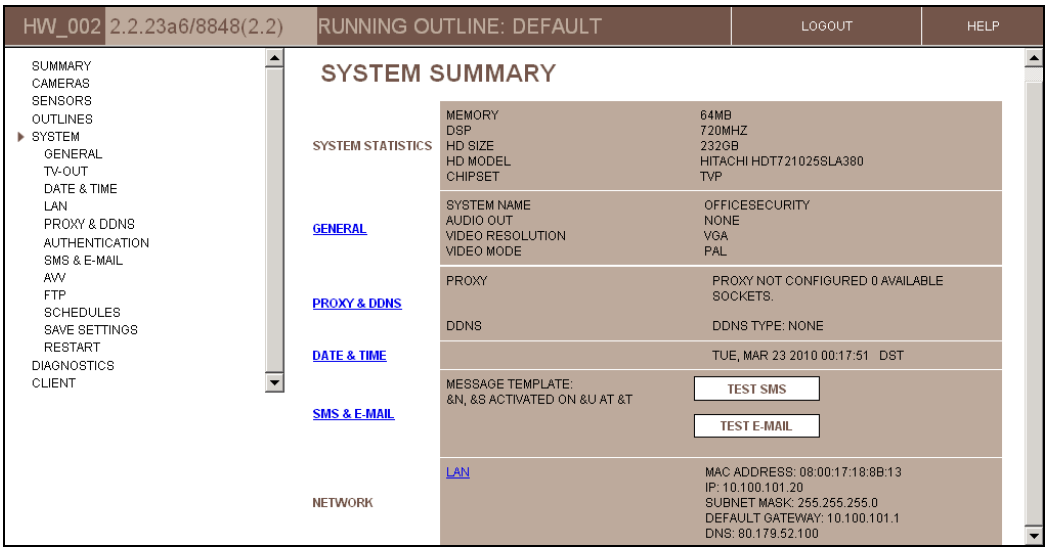


Figure 7: System Summary screen

Overview of the Interface

The configuration utility consists of screens that are displayed on the right side of the window and a **Main Menu** in a sidebar on the left side of the window.

The **Main Menu** has a hierarchic tree structure. When you select one of the top level options, lower-level options appear below it in the menu.

Top-level menu options generally open *summary* screens that display the current settings in a given category and may include links from which you can access some of the lower-level screens in the selected category. Lower-level screens are used to modify configuration settings and manage the system.

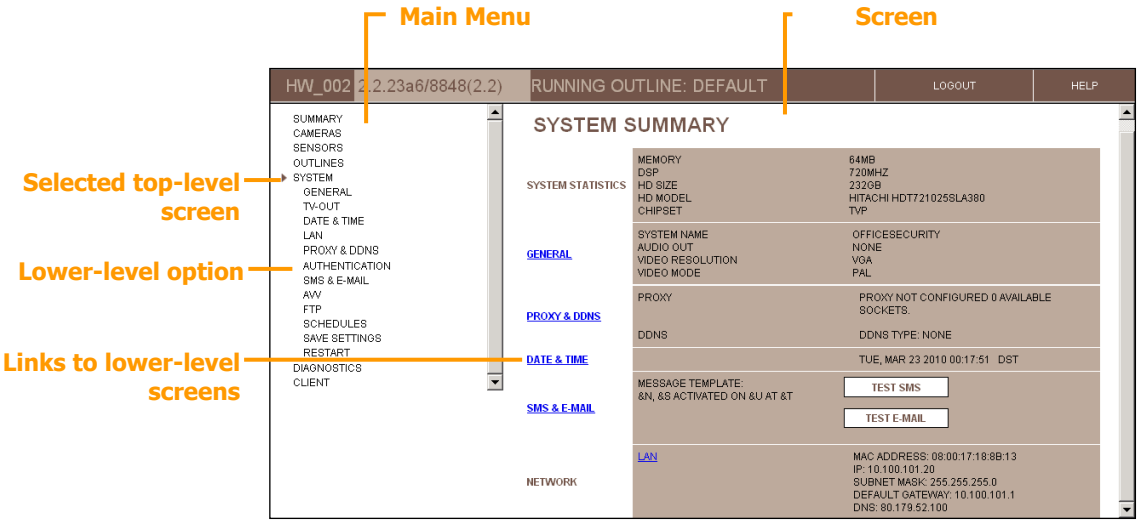


Figure 8: Elements of the interface

Top-Level Menu Options

The following top-level menu options are available:

Option	Description
Summary	Displays a summary of the system's settings and status
Cameras	Configuration of video settings for each camera, including PTZ settings (remote camera control), VMD (Video Motion Detection), and recording settings
Sensors	Configuration of sensors and activators
Outlines	Configuration of sets of different camera and sensor settings that can be activated either manually or automatically in response to sensor events or according to a fixed schedule
System	• Configuration of general system settings, including network settings, unit date and time, authentication, configuration of SMS and e-mail notifications, and TV-Out settings • Saving configuration changes on the unit and restarting the unit
Diagnostics	Tools for monitoring and testing the system
Client	Viewing lists of events that were detected, selecting events to download to an FTP server, viewing live snapshots from a camera

Status Bar

A status bar at the top of the screen contains the following elements:

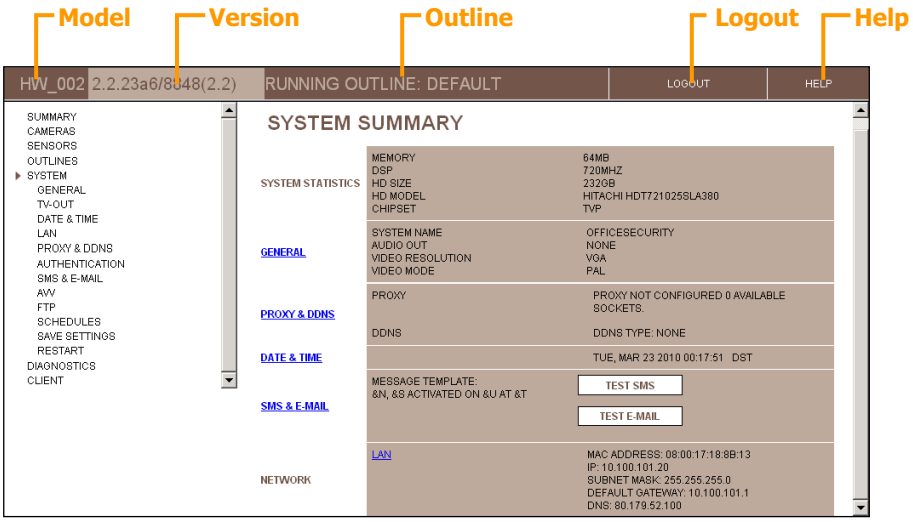


Figure 9: Status bar elements

- **Model:** Video Gateway model number
- **Version:** Firmware version
- **Outline:** Name of the current outline (see *Defining Alternate Outlines*, page 118)
- **Logout** button; click to log out of the configuration utility and display the **Login** screen again
- **Help** button; click to open the SerVision website in a browser window. The website includes information about configuring and working with your Video Gateway system, including the most up-to-date version of this manual (under `Support->Documentation->Manuals and Product Overviews`)

Using the Configuration Utility

Typically, the configuration process proceeds as follows:

To configure the Video Gateway unit:

1. In the **Main Menu**, click one of the top-level options, e.g., **Cameras** or **Sensors**. The selected summary screen opens.
2. Click an option in the **Main Menu** or a link in the summary screen to open the desired lower-level screen. The screen opens.
3. Modify the settings in the settings in the screen as necessary, and then click **Update** to store them on the unit.

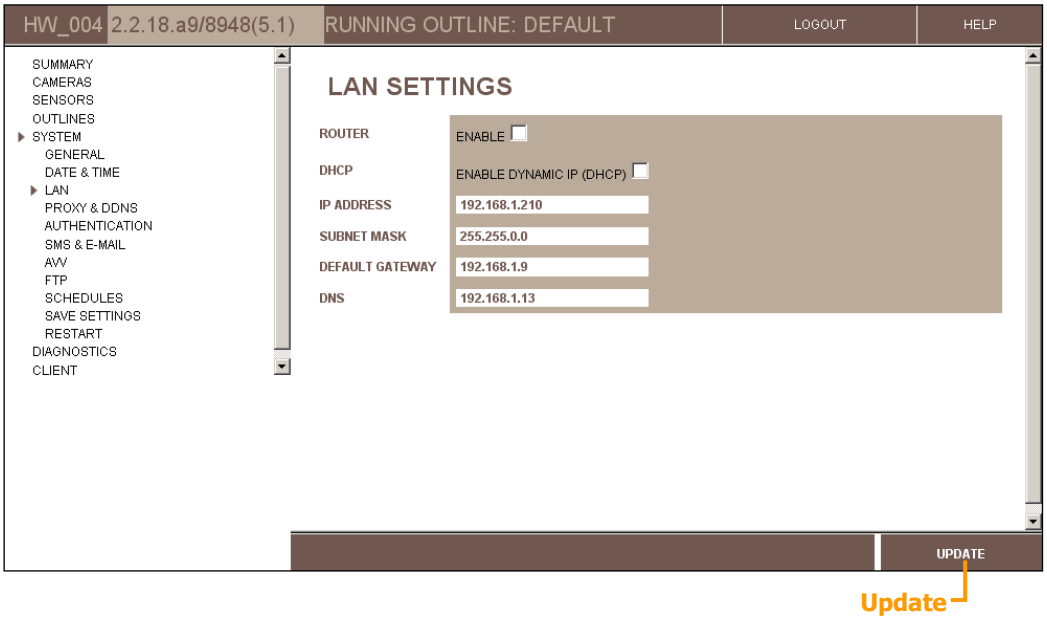


Figure 10: Update button

The changes are saved in a temporary cache on the unit, and an *Update Confirmation* (ATTENTION) message appears at the lower left of the screen, below the **Main Menu**.

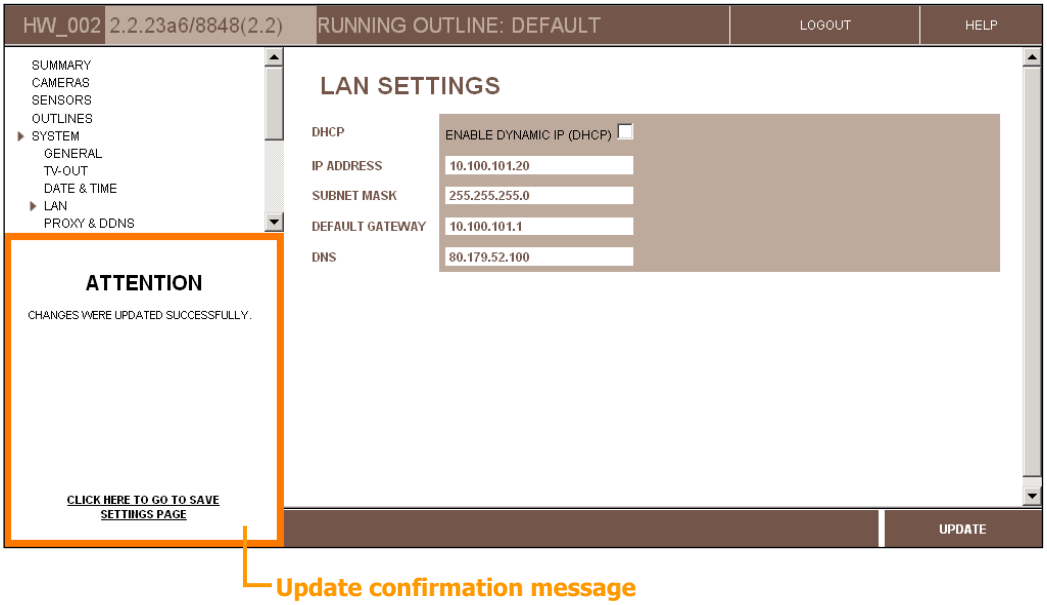


Figure 11: Update confirmation message

Note: If the update confirmation message does not appear, or an error message appears, all changes made since the last successful update of the page are discarded.

4. To modify additional settings, navigate to the relevant screen and make the changes as necessary. Click **Update** in each screen when you are finished modifying its settings. (You can continue modifying the settings in the same screen, if necessary; just be sure to click **Update** before you navigate to a different screen to ensure the settings are saved as they are displayed.)

5. When you have updated all the settings as necessary, do one of the following:

   - In the update confirmation message, click "Click here to go to Save Settings page."
   - In the **Main Menu**, under **System**, click **Save Settings**.

   The **Save Settings** screen opens:

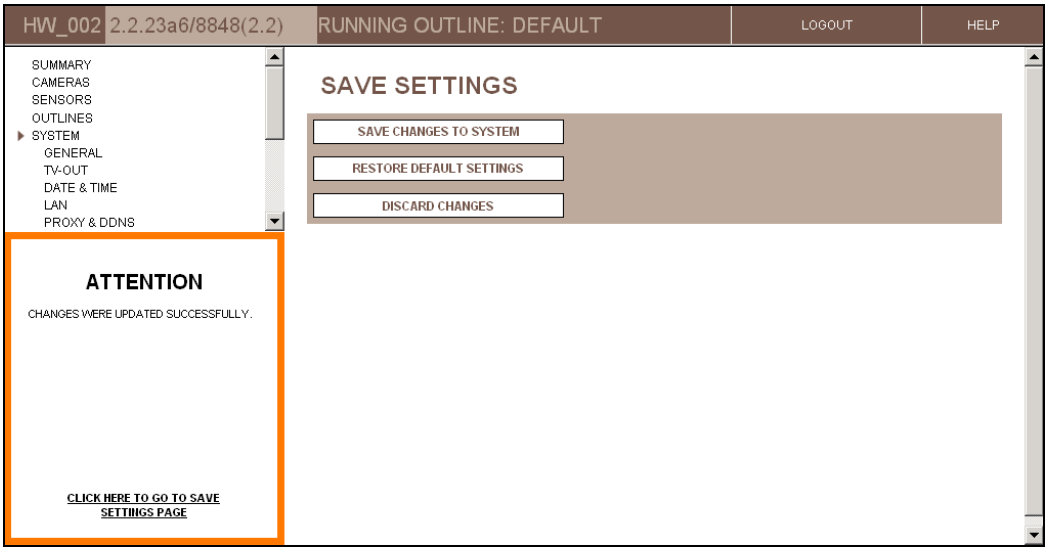


Figure 12: Save Settings screen

6. In the **Save Settings** screen, click **Save Changes to System**. The unit stores the changes permanently, and the **System Restart Page** screen opens:

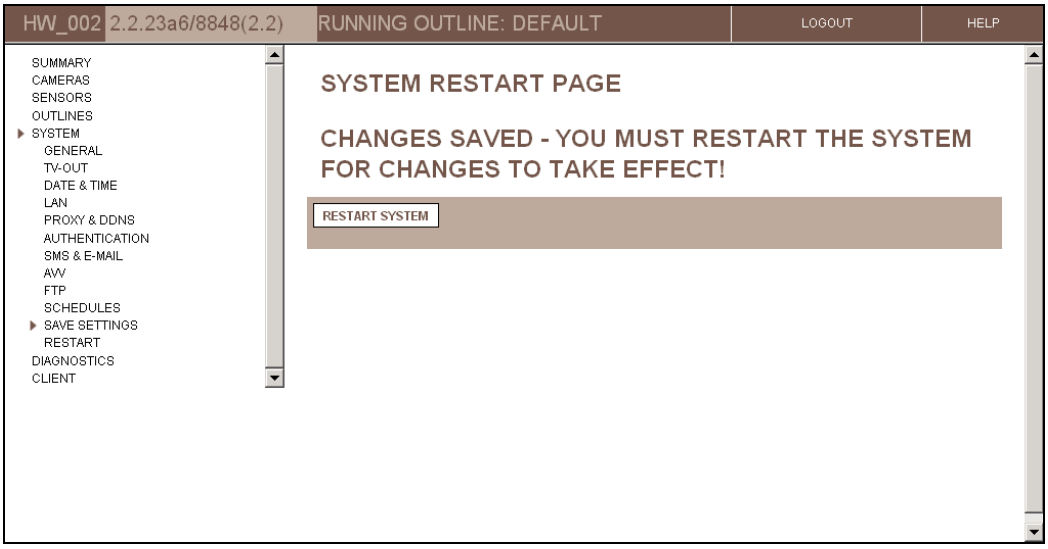


Figure 13: System Restart Page screen

7. Click **Restart System**. The unit restarts, and the changes are implemented. You are automatically logged out of the configuration utility.

   Note: Most changes to the settings in the configuration screens only take effect on the Video Gateway unit after they are saved and the unit is restarted, as describe in steps 5–7. For additional information, see *Saving Configuration* Changes, page 125.

   Note: For security reasons, a configuration session times out after 15 minutes. If the configuration utility is open with no user activity (pages loaded) for more than 15 minutes, you must perform the login procedure again to continue configuring the Video Gateway unit. Configuration changes that were made during the timed-out session are not discarded, as long as **Update** was clicked in the relevant screen before the time-out occurred.

Opening the Configuration Remotely

Once the unit has been configured for remote client access via the internet (see *LAN Settings*, page 38), you can also access the configuration utility remotely via the internet. To do this, all you need is a PC that is connected to the internet. You can then access the configuration utility in one of the following ways:

- **Through the MultiClient:** Connect to the Video Gateway and use the MultiClient to access the configuration utility, as explained below. (For additional information about working with the MultiClient, please refer to the *MultiClient User Guide*.)
- **Manually through a browser:** Enter the address and port in the **Address** field of a browser window, as described under *Opening the Configuration Manually*, page 16.

Both of these methods can also be used to access the configuration utility over the internet through a proxy connection.

To access the configuration utility remotely through the MultiClient:

1. Connect to the Video Gateway through the MultiClient.

   Note: The MultiClient's **Search** function does not work over the internet. Therefore, you will have to manually add and configure the connection to the Video Gateway. For information about how to do this, please refer to the *MultiClient User Guide*.

2. In the **Connection Panel** (left panel) of the MultiClient, select the Video Gateway.

3. At the bottom of the **Connection Panel**, click the **Config** button. A new browser window opens, and automatically connects to the configuration utility login page for the Video Gateway.

   Note: If you cannot connect remotely through port 10000, the login page will not appear at this point, and the browser will display an error message instead. Change the port number in the **Address** field of the browser from 10000 to the port that is set in the router's port forwarding settings (see *General System Settings*, page 19), and press **Enter** to reload the page. The login page should then appear. For additional information, see *Opening the Configuration Manually*, below.

   Note: If more than one SerVision Video Gateway is connected to the internet via the same router, each of them must use a different port. When you click **Config** in the MultiClient, the browser automatically connects to port 10000. As a result, the MultiClient may initially connect you to the wrong Video Gateway unit. In this case, you should manually correct the port number in the **Address** field of the browser, as explained in the previous note.

Opening the Configuration Manually

The configuration utility can be opened manually in a browser using the IP address and port of the unit. This is particularly useful in situations in which you cannot open the configuration utility through the MultiClient. This is most likely to occur when you are opening the configuration utility remotely and either do not have access to the MultiClient or cannot connect to the unit remotely through port 10000.

To open the configuration utility manually, you must know the network address (IP or hostname) of the Video Gateway and the port allowing access to the configuration utility. The required network address depends on whether you are accessing the configuration utility through a local connection (through the same LAN or through an Ethernet cross cable) or a remote connection (through the internet):

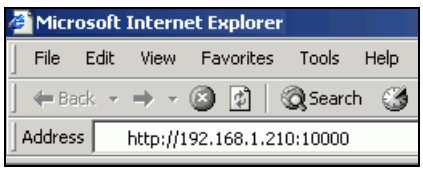
- **Local connection:** The network address is the private IP address of the Video Gateway on the local network. This can either be its dynamic IP, or, if it has one, its static IP. The port is 10000.
- **Remote connection:** The network address is the public IP or hostname of the router through which the Video Gateway connects to the internet. The port is the port that allows access to the configuration utility via port forwarding.

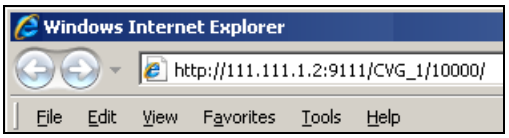
If you connect through a proxy connection, you must also know the network address and port of the proxy server.

To open the configuration utility manually:

1. Open a web browser.

2. In the **Address** field of the browser, enter the IP address and system port number of the Video Gateway, as follows:

Connection Type	Address
Direct (local or remote)	`http://IP:port` For example, if the Video Gateway's IP address is 192.168.1.210 and you are connecting on port 10000, enter `http://192.168.1.210:10000`, as in figure 14:  ***Figure 14: Address for configuring a unit with a static IP***

Connection Type	Address
Proxy	`http://Proxy-IP:Proxy-port/Video Gateway name/Video Gateway port/` For example, if the proxy server's IP address is 111.111.1.2, its port number is 9111, the name of the Video Gateway is CVG_1, and its port is 10000, enter `http://111.111.1.2:9111/CVG_1/10000/`, as in figure 14:  ***Figure 15: Address for configuring a unit via a proxy server*** **Note:** Be sure to include the slash (**/**) at the end of the address.

3. Press **Enter**. The configuration utility **Login** screen opens.
4. Log into the configuration utility as usual (see page 10).

Configuring System Settings

System settings include system-wide settings, such as the name of the unit, date and time settings, and network configuration.

The **System Summary** screen summarizes the current system settings and provides links to some of the system configuration screens in which the system settings can be modified. It also includes information about the Video Gateway unit and the network, and, depending on the configuration settings, may include buttons that you can use to test the current e-mail and SMS notification settings.

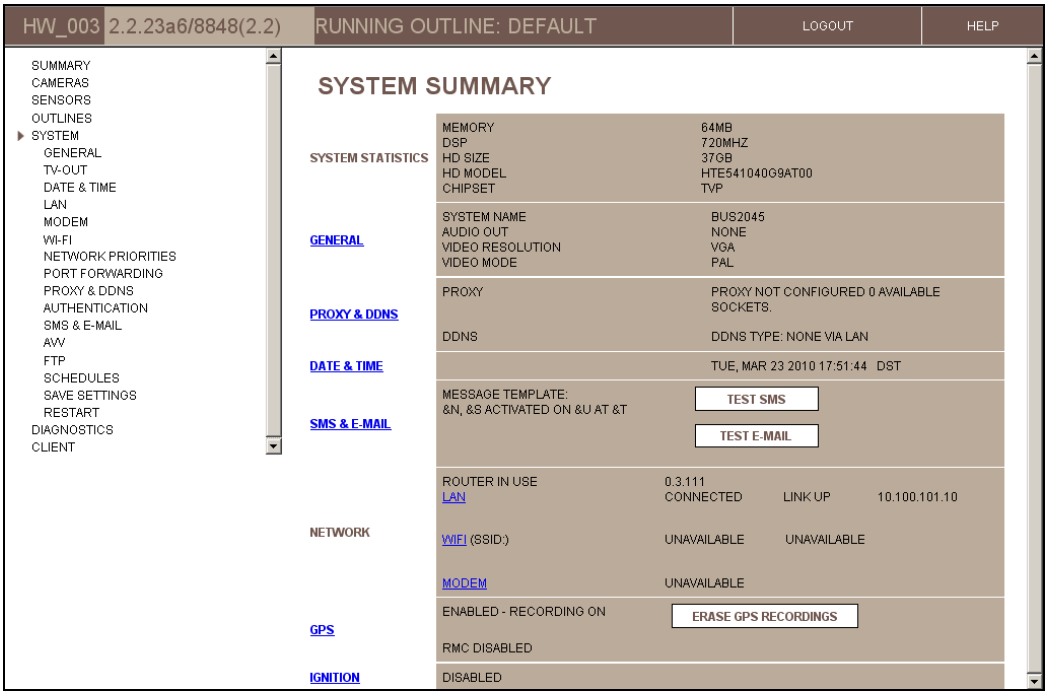


Figure 16: System Summary screen (MVG)

The following system-configuration screens are available:

- **General:** Unit name, port number, and activation of certain options (see page 19)
- **TV-Out:** Configuration of a closed-circuit monitor (CCTV) connected to the Video Gateway (see page 28)
- **Date & Time:** Automatic and manual time setting (see page 33)
- **LAN:** Ethernet network settings (see page 38)
- **Modem:** Cellular modem configuration (UVG, MVG, and CVG-M only; see page 40)
- **WiFi:** Wireless network connection settings (UVG and MVG only; see page 46)
- **Network Priorities:** Ranking the available network connections for outgoing communication from the unit to other networks, to indicate which connections should be tried first (UVG and MVG; see page 51)
- **Port Forwarding:** Configuring ports that allow external devices to connect to devices within the local network managed by the Video Gateway's router (UVG and MVG only; see page 52)
- **Proxy and DDNS:** Proxy and DDNS settings (see page 53)
- **Authentication:** Usernames and passwords for accessing and configuring the unit (see page 57)
- **SMS & E-mail:** Event notification settings (see page 58)

- **AVV:** Configuration of automatic uploading of video to an FTP server (see page 64)
- **FTP:** Configuration of manual uploading of video to an FTP server (see page 71)
- **Schedules:** Configuring the unit to automatically switch the running outline at specified times (see page 73)
- **Save Settings:** Saving configuration changes (see page 125)
- **Restart:** Restarting the unit in order to fully implement configuration changes or improve system performance (see page 161)

➪ ***To open the System Summary screen:***

- In the **Main Menu**, click **System**.

General System Settings

The general system settings are the basic settings for the unit: the name of the unit, the port it uses for communication, video resolution and type, and activation of certain optional features.

About the General System Settings

This section contains background information about the general system settings.

Ports

The unit has two access ports:

- Port 10000, which is intended for configuration and is always open for incoming connections.
- System port, which is intended for client connections, and can be configured. The default number of this port appears on the sticker on the underside of the unit. (It is usually 9988.) You can configure this port as necessary to suit the requirements of your network.

NOTE: If port forwarding in your network cannot be set up for port 10000, you can use the system port for remote configuration as well as client connections.

Video Resolution

The Video Gateway can capture video in one of the following resolutions:

- **VGA:** This resolution is the standard used by digital screens such as computers and cellular phones. When VGA is selected, the full-screen resolution is 640x480 pixels. Available smaller screen sizes are SIF (one quarter of full screen; 320x240 pixels) and QSIF (one sixteenth of full screen; 160x120 pixels).
- **D1:** This resolution is the standard used by analog screens such as televisions. When D1 is selected, full-screen resolution is 704×480 pixels for NTSC systems and 704x576 pixels for PAL systems. Available smaller screen sizes are CIF (one quarter of full screen; 352x240 pixels for NTSC systems and 352x288 pixels for PAL systems) and QCIF (one sixteenth of full screen; 176x120 pixels for NTSC systems and 176x144 for PAL systems).

VGA normally displays properly even on analog equipment such as CCTV screens. If your system supports both resolutions, it is recommended that you select VGA resolution because it requires slightly less system resources.

Audio Settings

Audio settings enable and configure the speakers and microphone, as follows:

- **Audio Out settings:** Enable internal and external speakers, and control the volume of the speakers. When the speakers are enabled, remote users can speak into a microphone on a client device and be heard through the

unit's speakers on-site. (At present, the MultiClient and the Symbian S60 cell-phone client applications support this feature.)

- **Audio In settings:** Enable the microphone and control its volume. When a microphone is connected and enabled, audio from the site can be heard along with live and recorded video.

GPS Settings

GPS makes it possible to track the location of an MVG or CVG-M unit by means of the unit's built-in GPS receiver. For additional information, see *Configuring GPS*, page 26. For information about viewing the unit's location on a map, and tracking the route taken by the unit, please refer to the *MultiClient User Guide*.

Ignition-Off Shut-Down

The **Ignition** settings define whether the MVG or CVG-M unit should automatically shut down when the vehicle ignition is turned off and, if so, how long the unit should continue operating after the ignition is turned off before it shuts down.

Download Optimizations

Downloading recorded video uses system resources that would otherwise be available for other functions such as recording or streaming live video. Download optimization settings are used to tweak the allocation of system resources between downloading and other system processes. The following options can be selected:

- **Stop Recording on Download:** Stops all video recording when video is being downloaded from the Video Gateway. This option increases the download speed, because it allocates more of the unit's resources to the download task. However, it also means that there may be gaps in the recorded video at the times that the video is downloaded.
- **Block New Connections while Downloading:** Prevents the streaming of new live or recorded video streams to a client application while downloading of recorded video is taking place. When this option is not selected, the process of downloading may take somewhat longer to be completed. In addition, the framerate of video displayed in the client may be reduced at times while the download is in progress. When this option is selected, transmission of new live or recorded video streams to client applications does not take place while downloading is underway, but existing streams are not closed.
- **Disable TV-Out While Downloading:** If a CCTV monitor is connected to the Video Gateway, stops streaming of video to the monitor while downloading of recorded video is taking place

Additional System Settings

A number of other system settings can be configured in the **General System Settings** screen:

- **Video Authentication:** Adds a digital signature to each frame of video captured by the system. This signature makes it possible to identify frames that have been tampered with. When a SerVision client application plays video that has a digital signature and discovers a frame that has been changed from its original state, the status of the stream indicates that the stream was modified. (Note: Only the current versions of the MultiClient and the Player support this feature.)
- **Outline Switching:** Defines whether the system can activate different outlines automatically and, if so, what type of trigger will cause the system to switch to a different outline, sensor events (from Sensor 1) or a schedule. If neither type of automatic outline switching is selected, you can manually change the active outline at any time. For additional information, see *Defining Alternate Outlines*, page 118.
- **LAN Optimization:** Speeds up the transmission of live video from the Video Gateway to PCs on the same LAN. This feature is not recommended for use with other types of client connections – internet, cellular, etc.

- **SMS on System Start:** Sends SMS notifications to all SMS recipients whenever the Video Gateway starts running. For information about defining SMS recipients, see *SMS and E-mail Notifications*, page 58.
- **ADAM Sensors:** Enables the activation of sensors that are connected to the Video Gateway unit through an ADAM module. For additional information, see *Configuring Sensor and Activator* Settings, page 110.
- **IA Sensors and Activators:** Enables the activation of sensors and activators that are connected to the Video Gateway unit through an IA 3126-2 relay board. For additional information, please refer to your unit's installation manual.
- **Maximum Recording Length:** Automatically erases recorded video after a specified period of time.

Configuring General System Settings

To adjust the general system settings:

1. In the **Main Menu**, under **System**, click **General**. The **General System Settings** screen opens:

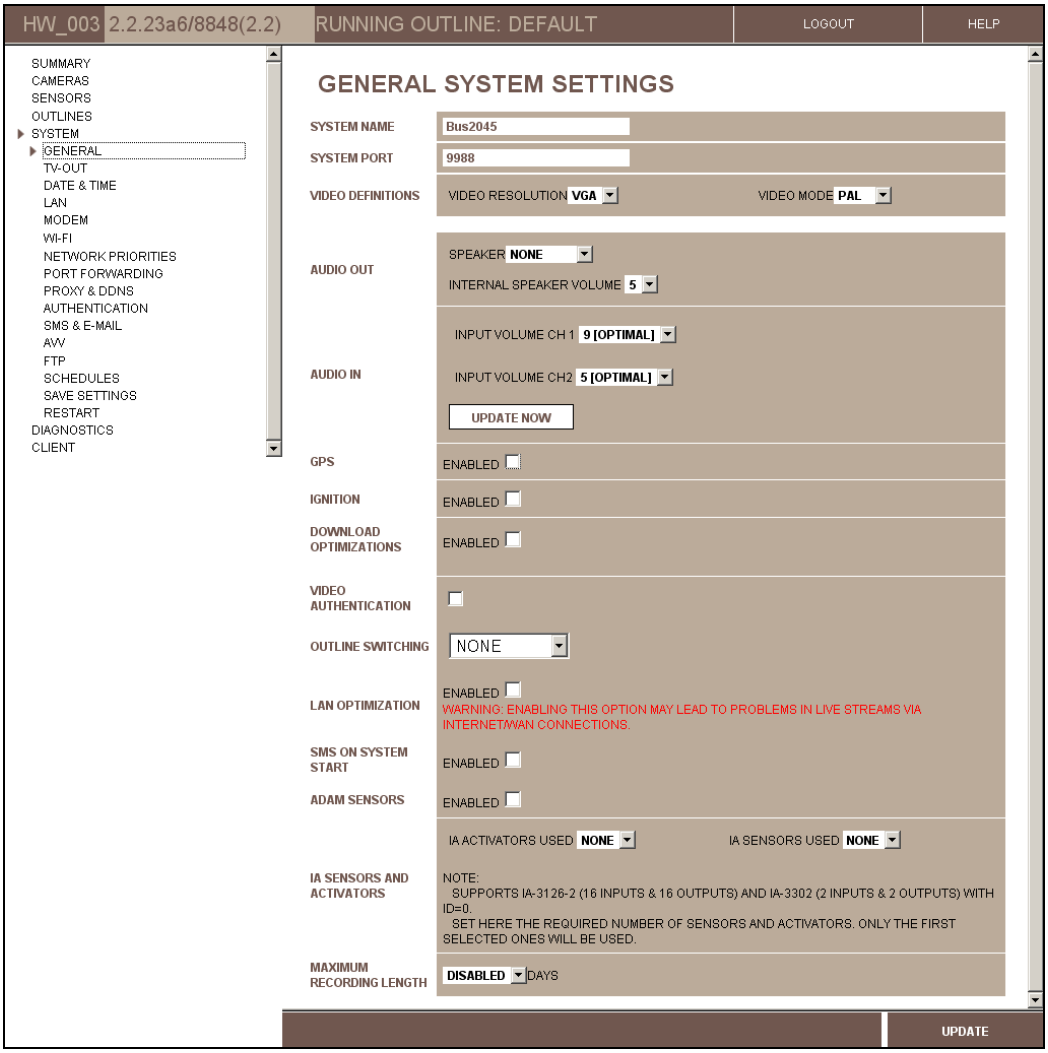


Figure 17: General System Settings screen (MVG)

2. Fill in the fields as follows:

Field	Description
System Name	Assign a name to the Video Gateway unit (up to 20 Unicode (UTF-8) characters). This name is used to identify the unit in client applications such as the MultiClient, in SMS and e-mail notifications, in AVV file names, and on the proxy. **Note:** Spaces and underscores in the name may cause problems with various network functions, such as e-mail notifications, proxy, and DDNS. Therefore, it is recommended not to include any spaces or underscores in the name.
System Port	Fill in the client access port of the Video Gateway unit. **Note:** If you want to access the unit remotely and cannot set up port forwarding for port 10000 in your network, you can also access the configuration utility using this port.
Video Resolution	Select the video resolution (VGA or D1). VGA is recommended for most applications. **Note:** If you change the video resolution, all recorded video is erased from the unit.
Video Mode	Select the video format (PAL or NTSC) used by the camera. **Note:** NTSC is generally used in North America. PAL is standard in most other locations. For additional information, consult the camera documentation. **Note:** If you are connecting a CCTV monitor to the Video Gateway, ensure that the monitor supports the video mode selected here. Some SECAM monitors will also work when the PAL video mode is selected. **Note:** When D1 video resolution is selected, and you change the video mode, all recorded video is erased from the unit.
Speaker	Select one of the following: • **None:** Disable both speakers. • **Internal:** Enable the internal speaker. (If an external speaker is connected to **Aout**, it is disabled.) • **External:** Enable the external speaker. (The internal speaker is disabled.) • **Both:** Enable both the internal speaker and the external speaker. (The same audio stream will be played on both speakers at the same time.) **Note:** This field controls the use of the speakers to play sound that is transmitted from a client device. Even if one or both of the speakers is disabled here, they can still be used to play audio when a CCTV is connected to the Video Gateway. See *Configuring a CCTV Monitor (TV-Out)*, page 28. **Note:** On the HVG, even if the internal speaker is enabled here, it can still be turned off by flipping down the **Mute** switch on the rear of the unit.
Internal Speaker Volume	Set the output volume for the unit's built-in speaker, as explained under *Configuring Microphone and Speaker Volume*, on page 24.
Input Volume Ch 1 / Input Volume Ch 2	Set the input volume for microphones connected to the unit, as explained under *Configuring Microphone and Speaker Volume*, on page 24. **Note:** On CVG and CVG-M models, only channel 1 is supported. **Note:** On the HVG, if the **Which input to use?** field appears, the unit only supports one microphone. Select the audio channel to which the microphone is connected from the dropdown list, and then set the input volume for that microphone as described below.

Field	Description
GPS (MVG and CVG-M only)	Select this option to enable tracking of the vehicle location by means of GPS. Then, configure the GPS feature as described under *Configuring GPS*, page 26. **Note:** For information about viewing the vehicle location on a map, and tracking the route taken by the vehicle, please refer to the *MultiClient User Guide*.
Ignition (MVG and CVG-M only)	Select this option if you want the unit to power down automatically whenever the ignition is turned off. If you do not select this option, the unit operates continuously as long as it has a power supply. **Note:** This setting only affects the unit if the unit is connected both directly to the battery and to the ignition. Otherwise, the unit operates continuously as long as it has a power supply. (For additional information, please refer to the unit's installation guide.)
Ignition Countdown (MVG and CVG-M only)	Select the amount of time that the unit should continue operating after the vehicle ignition is turned off, in seconds. **Note:** This setting only affects the unit if the unit is connected both directly to the battery and to the ignition. Otherwise, the unit operates continuously as long as it has a power supply. (For additional information, please refer to the unit's installation guide.) **Note:** This field only appears if the **Ignition** checkbox is selected.
Download Optimizations	Select this option if you want to modify the default download optimization settings. The fields required to modify the settings are added to the screen.
Stop Recording on Download	Select this option to stop all video recording when video is being downloaded from the Video Gateway. **Note:** This field only appears if **Download Optimizations** is enabled.
Block New Connections while Downloading	Select this option to prevent the streaming of new live or recorded video streams to a client application while downloading of recorded video to a PC is taking place. **Note:** This field only appears if **Download Optimizations** is enabled.
Disable TV-Out while Downloading	Select this option to stop streaming to the CCTV monitor connected to the Video Gateway while downloading of recorded video to a PC is taking place. **Note:** This field only appears if **Download Optimizations** is enabled and if TV-Out is enabled (see *Configuring a CCTV Monitor (TV-Out)*, page 28).
Video Authentication	Select this option if you want the system to include a digital signature in each video frame streamed and/or recorded by the unit. The signature can be used to identify streams that were tampered with. **Note:** This option increases the load on the system resources slightly, so it is advisable to activate it only if it is truly required.

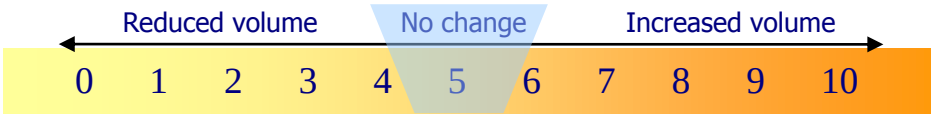
Field	Description
Outline Switching	Select one of the following types of triggers for activating different outlines: • **None:** No automatic outline switching – outlines can only be switched manually using the configuration utility (see *Defining* Alternate Outlines, page 118) • **Sensor:** Makes it possible to use Sensor 1 events as triggers for outline switching (see *Configuring Sensor and Activator* Settings, page 110) **Note:** For CVG and CVG-M models, this option should not be selected if the sensor connector (**In1**) is used to control the display on a connected CCTV monitor. For additional information, please refer to the unit's installation guide. • **Schedule:** Makes it possible to schedule outline switching (see *Schedules*, page 73)
LAN Optimization	If video from the unit will be viewed primarily or exclusively on PCs that are on the same LAN as the unit, select this option to minimize the streaming delay within the LAN. That is, when this option is selected, live video will be played as close to real time as possible. Clear this option if live video will be viewed remotely via the internet or a modem connection.
SMS on System Start	Select this option if you want the unit to send SMS notifications whenever it starts running.
ADAM Sensors	If sensors are connected to the unit through an ADAM module, select **Enabled**. This makes it possible to activate and configure the sensors. For additional information, see *Configuring Sensor and Activator* Settings, page 110.
IA Activators Used	If activators are connected to the unit through an IA relay board, select the number of activators that are connected to the board. For additional information, please refer to the unit's installation guide.
IA Sensors Used	If sensors are connected to the unit through an IA relay board, select the number of sensors that are connected to the board. For additional information, please refer to the unit's installation guide.
Maximum Recording Length	If you want recorded video to be erased automatically after a specified period of time, select the desired time period. A day is defined by the system as beginning at midnight. For example, if you select "1," the system saves all video that was recorded from midnight yesterday on. Video that was recorded before midnight yesterday is automatically erased. **Note:** When video is erased in this way, the storage space it occupied on the unit's storage media is not made available for additional recordings.

3. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Configuring Microphone and Speaker Volume

The volume of attached microphones and of the internal speaker can be digitally increased or decreased by the Video Gateway. Microphone volume can be modified to optimize the sound level of audio that is played by client software. Internal speaker volume can be adjusted to suit the location of the Video Gateway unit and the needs of those on-site.

You can choose from 11 levels of amplification. Level 5 means the volume is not modified at all. Levels 0 through 4 cause the volume to be reduced (the smaller the number, the greater the reduction); levels 6 through 10 cause it to be amplified (the greater the number, the greater the amplification). Level 6 is generally optimal for the internal speaker, level 9 for passive microphones, and level 5 for active microphones.



You can test the volume settings as you configure them by connecting to the Video Gateway using a client application. Volume levels can be adjusted for testing purposes without resetting the Video Gateway unit.

To configure the volume of the internal speaker:

1. Make sure someone is near the Video Gateway to listen to sound being transmitted from the speaker.
2. Using a client application that can transmit audio to a Video Gateway (the MultiClient and the Symbian S60 cell-phone client applications), connect to the Video Gateway.
3. Speak into the microphone of the client device and check with the listener to find out if the volume is appropriate. If it is not, adjust the settings as described below until they are satisfactory.
4. In the **General System Settings** screen, under **Internal Speaker Volume**, select a volume setting.

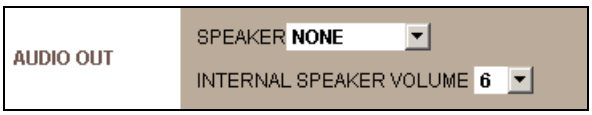


Figure 18: Speaker volume settings

5. Click **Update Now**. The volume settings are updated on the Video Gateway immediately

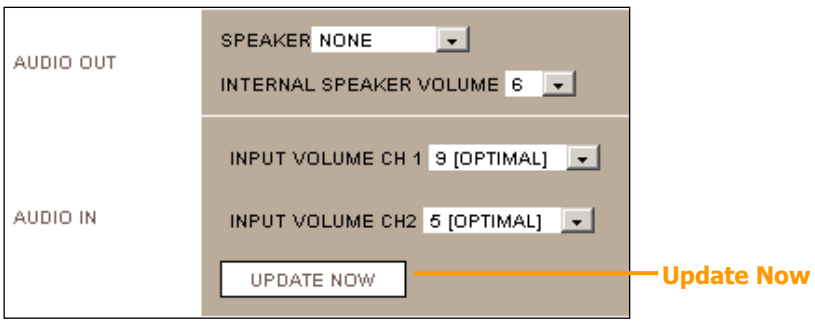


Figure 19: Update Now button

Note: All of the settings on the page are saved when you click **Update Now**. The volume settings are implemented immediately, and the changes to the other settings are implemented after the unit is restarted (see *Saving Configuration Changes*, page 125). If you modify the volume settings and click the **Update** button in the lower-right corner of the screen, the volume settings are not implemented until the unit is restarted.

6. Repeat steps 3–5 as necessary until the optimal volume setting is selected.

To configure the volume of a microphone:

1. Open the client application for which you want to optimize the settings (e.g., the MultiClient), connect to a live video stream that is linked to the microphone, and listen to the sound. If the volume needs adjustment, adjust it as explained in the following steps.

2. In the **General System Settings** screen, under **Audio In**, select a volume setting for the microphone. (For HVG, MVG, and UVG models, which have two microphone connectors, "CH1" sets the volume of the microphone connected to **Ain1**, and "CH2" sets the volume for **Ain2**).

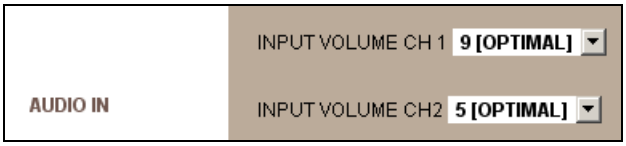


Figure 20: Microphone volume settings (HVG, MVG, UVG)

Figure 21: Microphone volume settings (CVG, CVG-M)

3. Click **Update Now** (see figure *19* on page 25). The volume settings are updated on the Video Gateway immediately.

   Note: All of the settings on the page are saved when you click **Update Now**. The volume settings are implemented immediately, and the changes to the other settings are implemented after the unit is restarted (see *Saving Configuration Changes*, page 125). If you modify the volume settings and click the **Update** button in the lower-right corner of the screen, the volume settings are not implemented until the unit is restarted.

4. In the client application, listen to the audio from the video stream that is linked to the microphone.

5. Repeat steps 2–4 as necessary until the optimal volume setting is selected.

MVG CVG-M

Configuring GPS

When GPS is enabled on an MVG or CVG-M unit, the unit uses the built-in GPS receiver to check its location at specified intervals. Whenever you are connected to the unit through the MultiClient, the location data that is received is automatically sent to the MultiClient. You can then use the MultiClient to view the last detected location of the unit on a map.

If you choose to record GPS data, you can use the MultiClient to see the path that was taken by the unit before it reached its last detected location. Recorded data is stored on the unit until the allocated disk space is filled; then, the oldest data is overwritten by the new data. The unit can store over one million GPS data points – approximately 2 months' worth of location data when the data is retrieved every 5 seconds.

If you have a server that can receive GPS data, MVG and CVG-M units can be configured to send the data to that server at specified intervals. Alternatively, you can send the data to a device connected to the serial port (the **RS232/485** connector) of the Video Gateway unit. (For additional information about this option, please consult your vendor.)

GPS data can be sent in one of two syntaxes. These syntaxes are part of the NMEA (National Marine Electronics Association) standard that defines the data required to process a GPS location. The available syntaxes are:

- **SV-RMC:** A modified version of Recommended Minimum sentence version C that includes some additional information that is not included in the standard NMEA definition, such as the name of the sending unit. Please consult your vendor for a complete description of this sentence.
- **GGA sentences:** Standard GGA sentences

Once the GPS data is received by your NMEA server or a device connected to the serial port, you can use it as you wish – to display in a map, monitor vehicle locations and possible deviations from the intended route, or store the data for future use.

NOTE: SerVision does not provide any software for handling NMEA data that is transmitted to an NMEA server. You must acquire and set up any required software on your own.

To configure the GPS settings:

1. In the **General System Settings** screen, under **GPS**, select **Enabled**. The fields required to configure the GPS settings are added to the screen:

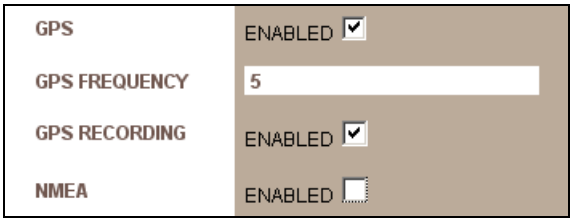


Figure 22: GPS settings

2. Fill in the fields as follows:

Field	Description
GPS Frequency	Specify how often the unit records its location, in seconds. Recommended value: 5. **Note:** Because GPS location recording requires system resources, it is not recommended to increase the frequency. While one check every five seconds is not sufficient for navigation via GPS, it provides ample information for tracking purposes.
GPS Recording	Select this option to record the results of each GPS location check. This option must be selected it you want to be able to see the route followed by the vehicle, or see where the vehicle was when a particular event occurred, in the MultiClient. **Note:** Clearing this option does not free disk space for other uses.

3. If you want to send NMEA data to a server or a device connected to the serial port, under **NMEA**, select **Enabled**. The fields required to configure this option are added to the screen.

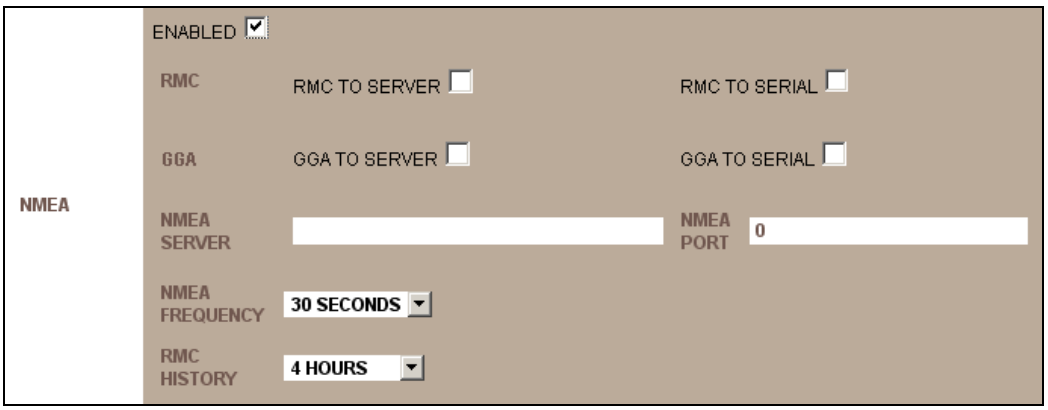


Figure 23: NMEA server settings

Note: Whenever NMEA is enabled, GPS recording is automatically activated and cannot be deactivated.

4. Fill in the fields as follows:

Field	Description
RMC to server	Select this option if you want to send GPS data in RMC syntax to an NMEA server.

Field	Description
RMC to serial	Select this option if you want to send GPS data in RMC syntax to a device connected to the serial port of the Video Gateway unit. The data is sent at 4800 baud, 8 bits, no parity, one stop bit (8N1).
GGA to server	Select this option if you want to send GPS data in GGA syntax to an NMEA server.
GGA to serial	Select this option if you want to send GPS data in GGA syntax to a device connected to the serial port of the Video Gateway unit. The data is sent at 4800 baud, 8 bits, no parity, one stop bit (8N1).
NMEA server	If you opted to send either RMC or GGA data to an NMEA server, fill in the IP address or hostname of the server.
NMEA port	If you opted to send either RMC or GGA data to an NMEA server, fill in the port used to by the server to receive NMEA data.
NMEA frequency	If you opted to send either RMC or GGA data to an NMEA server, specify how often the NMEA data should be transmitted to the server, in seconds. Recommended value: 30. **Note:** This value should be a multiple of the **GPS Frequency** value, and should not be higher than the **GPS Frequency** (i.e., the **NMEA Frequency** should not be set to a smaller number of seconds than the **GPS Frequency**). If it is, the **GPS Frequency** actually follows the **NMEA Frequency**.
RMC history (MVG only)	If you chose to send RMC data, specify how much data should be stored for sending later if the unit fails to send the data to the RMC server.

Erasing Recorded GPS Data

Recorded GPS data is normally stored on the unit's storage media until it is over-written by newer data. You can also erase all GPS data from the unit manually.

To erase all recorded GPS data from the unit's storage media:

- In the **System Summary** screen, under **GPS**, click **Erase GPS Recordings**. The recordings are erased.

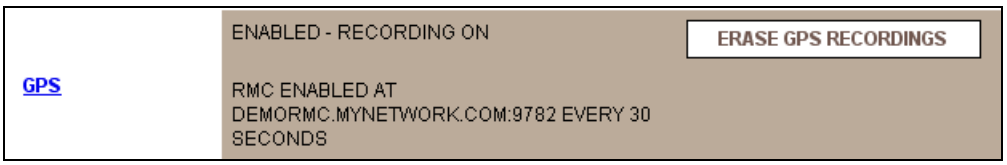


Figure 24: Erase GPS Recordings

Note: The **Erase GPS Recordings** button only appears if GPS recording is enabled in the **General System Settings** screen (see *Configuring GPS*, page 26).

Configuring a CCTV Monitor (TV-Out)

If a video monitor is connected to your Video Gateway, you must activate and configure it before you can see video from the Video Gateway on it.

NOTE: For information about setting up a CCTV monitor, please refer to your unit's installation guide. For information about viewing video on a connected CCTV monitor, see *Appendix A: Viewing Video on a* CCTV Monitor (TV-Out), page 170.

NOTE: TV-Out makes use of the same system resources as the unit's video recorder. As a result, the global framerate available for recording is reduced somewhat when TV-Out is enabled. For additional information about recorder framerates, see *Advanced Recorder Settings*, page 97.

To enable and configure a CCTV monitor:

1. In the **Main Menu**, under **System**, click **TV-Out**. The **TV-Out Settings** screen opens:

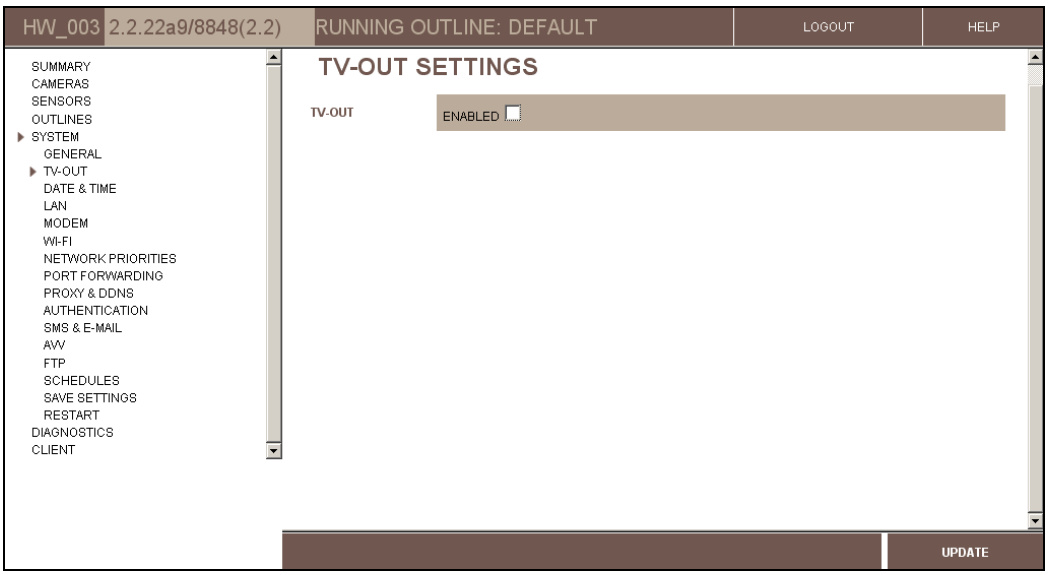


Figure 25: TV-Out Settings screen

2. Select **Enabled**. The fields required to configure the monitor display are added to the screen:

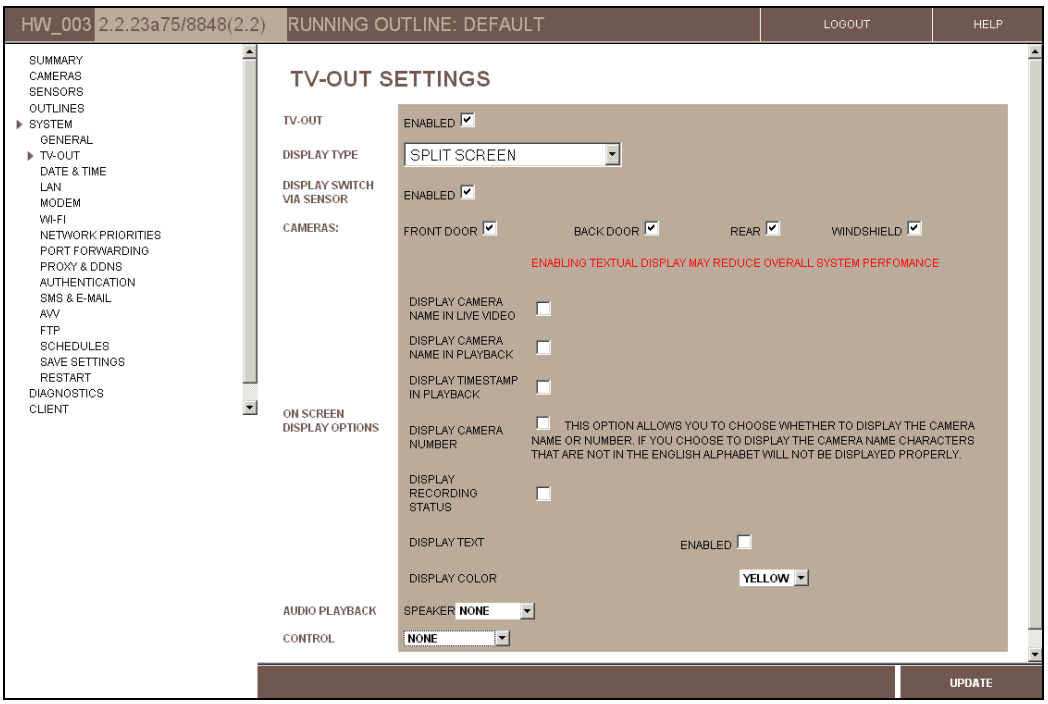


Figure 26: TV-Out settings (MVG)

Note: TV-Out cannot be enabled if recording framerates are very high (see *Advanced Recorder Settings*, page 97). In this case, if you attempt to enable TV-Out, a TV-Out Disabled message will be displayed:

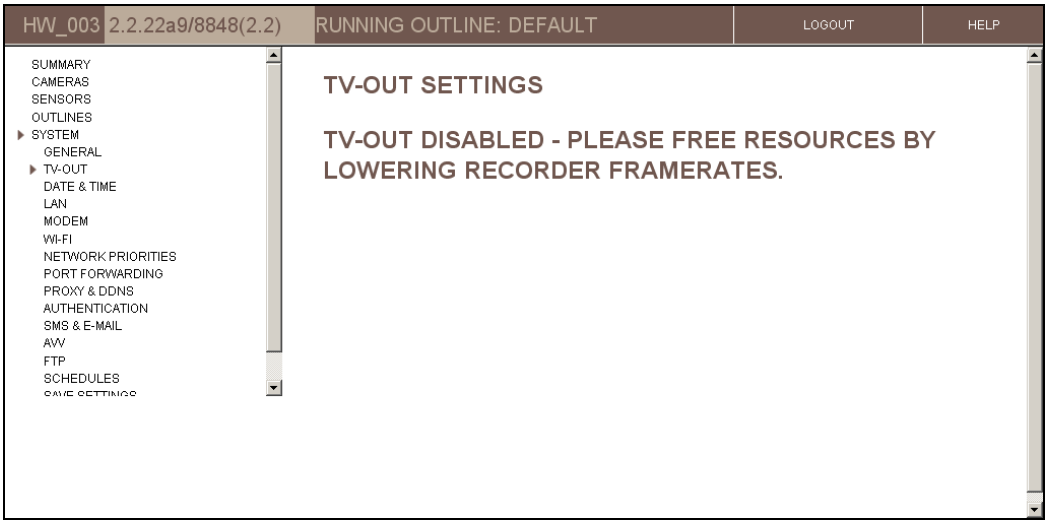


Figure 27: TV-Out Disabled message

3. Fill in the fields as follows:

Field	Description
Display type	Select the desired layout for the video display on the monitor: • **Split Screen:** Divides the screen so that video from all the cameras is visible all the time • **Full Screen – Camera #:** Displays video from the specified camera in full-screen mode • **Full Screen – Rotate:** Loops through all of the cameras, displaying each in full-screen mode for the number of seconds specified under **Rotate delay**
Rotate delay	If you selected the **Full Screen – Rotate** display type, specify the number of seconds you want the video from each camera to be displayed before it is replaced with video from the next camera. **Note:** This field only appears if the **Full Screen – Rotate** display type is selected.
Display Switch Via Sensor	Select this option if a switch is connected to the relevant sensor connector on the unit (**In6** on the HVG; **In4** on the MVG, and UVG; **In1** on CVG and CVG-M models), and you want to use the switch to cycle through the various display types. **Note:** This option is only fully activated if it is selected here and configured in the appropriate sensor configuration screen (for HVG, MVG, or UVG, the **Sensor 4** configuration screen; for CVG or CVG-M, the **Sensor** configuration screen), as described under *Configuring a Sensor to Control CCTV Display*, page 116. **Note:** On CVG and CVG-M models, this option should not be selected if the sensor connector (**In1**) is used for an outline switch. For additional information, please refer to the unit's installation guide.
Cameras	Select the cameras that will be accessible via the monitor. Cameras that are not selected do not appear in the monitor at all. Video from these cameras cannot be viewed on the monitor and the cameras cannot be configured through the monitor.

Field	Description
Display Camera Name in Live Video	Select this option if you want the name of the camera to be displayed in the camera pane when live video is played on the monitor. **Note:** Displaying names on the monitor requires extra system resources and may impede performance. **Note:** If the name of a camera contains characters from non-Latin alphabets such as Hebrew or Arabic, or accented characters, those characters are not displayed properly on the monitor. In this case, you can select both this option and **Display Camera Number** (see below) in order to display the index of the camera (1, 2, 3, or 4) instead of its name.
Display Camera Name in Playback	Select this option if you want the name of the camera to be displayed in the camera pane when recorded video is played on the monitor. **Note:** Displaying names on the monitor requires extra system resources and may impede performance. **Note:** Recorded video can only be played on the monitor if touch or mouse support is enabled (see steps 7 and 8 below). Otherwise, this option has no effect. **Note:** If the name of a camera contains characters from non-Latin alphabets such as Hebrew or Arabic, or accented characters, those characters are not displayed properly on the monitor. In this case, you can select both this option and **Display Camera Number** (see below) in order to display the index of the camera (1, 2, 3, or 4) instead of its name.
Display Timestamp in Playback	Select this option if you want the date and time to be displayed in the camera pane when recorded video is played on the monitor. **Note:** Displaying timestamps on the monitor requires extra system resources and may impede performance. **Note:** Recorded video can only be played on the monitor if touch or mouse support is enabled (see steps 7 and 8 below). Otherwise, this option has no effect.
Display Camera Number	If you chose to display the camera name for live and/or recorded video, select this option to display the camera number instead of its name. This is particularly useful if the name contains non-Latin characters that are not displayed properly on the monitor. **Note:** This option has no effect if neither **Display Camera Name in Live Video** nor **Display Camera Name in Playback** is selected.
Display Recording Status	Select this option if you want the recording status to be displayed at the bottom of the screen at all times. The recording status indicates whether recording is taking place as it should be, and, if it is, displays the current recording status of each camera in the system. For additional information, see *Recording Status Display*, page 198.

4. If you want any other text to be displayed on the monitor, such as your company name or an advertisement, under **Display Text**, select **Enabled**. A text field is added to the screen. Enter the text you want to display in the text field. The text will be displayed on the monitor at the bottom of the screen, in the center.

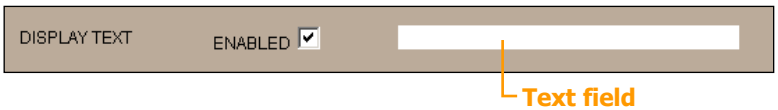


Figure 28: Text field

5. Under **Display Color**, select the color in which on-screen text should be displayed. You can choose one of five preset colors or select any color you wish by specifying its RGB hexadecimal code, as follows:

   - To select one of the preset colors: from the dropdown list, select **Yellow**, **Orange**, **Black**, **Blue**, or **Red**.
   - To specify a hexadecimal code: from the dropdown list, select **Other**. The fields required to specify the color are added to the screen. The hexadecimal code field displays the hexadecimal code of the currently selected color. The code consists of three two-digit hexadecimal numbers, for the red, green, and blue components of the color, respectively. The current color is displayed as the background to the **Test Color** button.

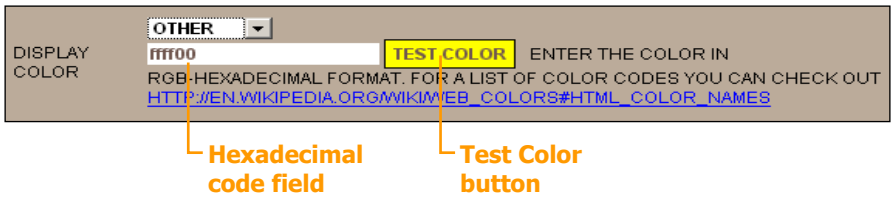


Figure 29: Hexadecimal number field

Type the desired hexadecimal code into the field. To see what the color looks like, click **Test Color**.

Note: For more information about RGB hexadecimal codes, click the link below the fields.

6. Select one of the following audio playback options (for playback of recorded video):

   - **None:** Do not play attached audio when recorded video is played.
   - **Internal:** Play attached audio from the unit's built-in internal speaker when recorded video is played.
   - **External:** Play attached audio from the external speaker plugged into **Aout** when recorded video is played.

   Note: This option only effects playback of recorded video streams that have audio attached (i.e., a microphone attached to the Video Gateway is linked to the camera recording the video stream).

7. For the MVG, CVG, and CVG-M, if the monitor has a touchscreen, under **Control**, select **Touchscreen**. The **Screensaver** field is added to the screen.

   If the monitor does not have a touchscreen, select **None**, and then skip to step 11.

8. For the HVG and UVG, if the supplied mouse is connected to the unit, under **Mouse**, select **Enabled**. The **Screensaver** field is added to the screen.

   If the mouse is not connected to the unit, skip to step 11.

9. If you want a screen saver to be turned on when there is no user input (the touchscreen has not been touched or the mouse has not been moved) for a period of time, under **Screensaver**, select **Enabled**. The fields required to define the time period are added to the screen:

Figure 30: Screensaver settings

10. Under **Timeout**, specify the period of time that must pass without user input before the screensaver is activated.

    - Under **Hours**, fill in the number of hours in the timeout period.
    - Under **Minutes**, fill in the number of minutes in the timeout period.

For example, according to the settings in the figure above, in which *Hours* is "0" and *Minutes* is "10," the screensaver is turned on whenever there is no user input for ten minutes.

11. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Setting the Unit Time

The unit has a built-in battery-backed clock that keeps track of the date and time even when the unit is turned off. It is important to ensure that the time on the unit is accurate whenever the system is running; all video recordings include timestamps that are derived from the unit's time, and playback relies on these timestamps. An inaccurate clock can lead to misunderstandings when playing recorded video. Moreover, the unit will not record if the time on it is invalid.

The clock can be set by manually synchronizing its time with the time on the PC on which the configuration utility is running. This should be done when the system is first set up.

Like most clocks, the unit's clock has a tendency to drift slightly over time. Therefore, the time should be updated at frequent intervals. The time can be updated manually at any time. The unit can also be configured to update its clock automatically by connecting to an NTP time server at specified intervals. This option only works when the unit has access to one or more NTP time servers, either public ones on the internet or locally-installed ones on the LAN. Public NTP servers can be used free of charge and can be easily accessed when the unit has internet access. MVG and CVG-M units can also be configured to update their clocks from GPS servers.

In addition to the time itself, the general time settings – time zone and daylight savings time (summer time) – should always be configured correctly. The time zone and daylight-savings settings should be set correctly before the clock is set. (After setting the time zone, be sure to click **Update** and restart the unit before manually updating the time.) Daylight savings time can be activated manually or configured for automatic activation. When daylight savings time is activated, the time on the unit clock is set one hour ahead of the time in the selected time zone.

To set the general time settings:

1. In the **Main Menu**, under **System**, click **Date & Time**. The **Date & Time Settings** screen opens:

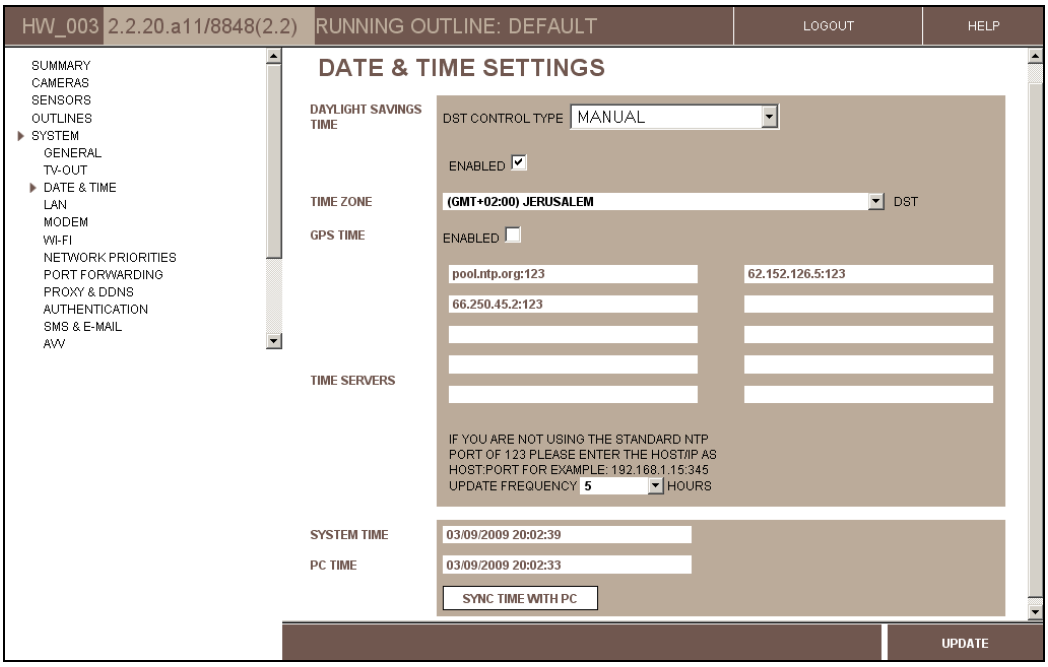
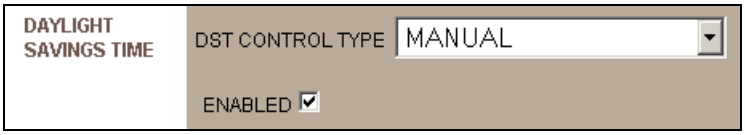
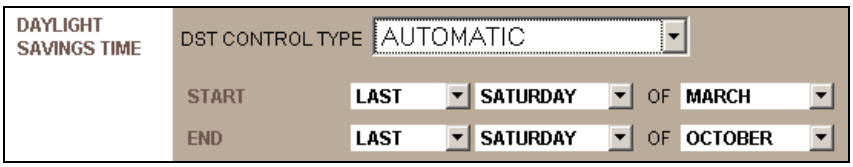
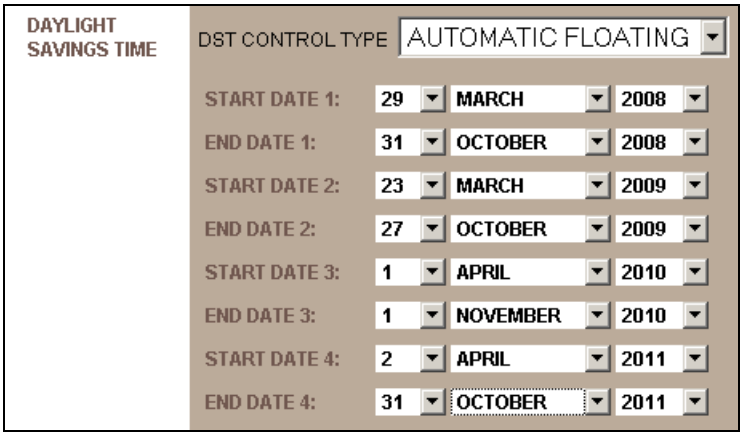


Figure 31: Date & Time Settings screen (MVG)

Note: The current date and time recorded on the clock of the Video Gateway unit appear in the **System Time** field.

2. Under **DST Control Type**, select one of the following options:

Option	Description
Manual	Lets you activate and deactivate daylight savings time manually. When this option is selected, the **Enabled** checkbox appears below the **DST Control Type** field. Select this checkbox when daylight savings time begins, and clear it when daylight savings time ends.  ***Figure 32: Manual DST settings***
Automatic	Lets you define a rule for the automatic activation and deactivation of daylight savings time. For example, you can specify that daylight time should be activated on the last Sunday of March. When this option is selected, the **Start** and **End** lines appear below the **DST Control Type** field. In the **Start** line, specify the start date of daylight savings time; in the **End** line, specify the end date.  ***Figure 33: Automatic DST settings***
Automatic Floating	Lets you specify the start and end dates of daylight savings time. When this option is selected, four pairs of **Start Date** and **End Date** fields appear below the **DST Control Type** field. Use them to define up to four daylight-savings-time periods (covering the next four years).  ***Figure 34: Automatic-Floating DST settings***

Note: When daylight savings time is activated or deactivated automatically, the change is implemented at midnight at the beginning of the selected day. For example, if you select Saturday, it is implemented at midnight between Friday and Saturday.

Note: When daylight savings time is activated, the time on the unit clock is set one hour ahead of the time in the selected time zone.

3. Under **Time Zone**, select the time zone in which the Video Gateway is located.

4. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Updating the Date and Time Manually

You should set the unit date and time manually when you first set up the system and when the Video Gateway has not been used for a while. If you cannot or do not want to implement automatic time setting, you should also update the time manually whenever the date and time are no longer accurate.

You can see the current date and time settings of the Video Gateway unit and of the PC in the **Date and Time Settings** screen; the time on the Video Gateway unit is shown in the **System Time** field and the time on your computer is shown in the **PC Time** field. Before you manually set the date and time on the Video Gateway unit, make sure the date and time on the PC are correct and that the time zone and daylight-savings settings are the same on the unit and on the PC.

The system stores time in GMT format. Because of this, it is very important to ensure that the time zone and daylight savings time settings are identical on the PC and the Video Gateway. For example, if the PC is located in New York, the system should be set to use GMT-5:00 (Eastern Time). If daylight savings time is in effect in New York at the time, daylight savings time must be activated on the Video Gateway or the GMT conversion will not be accurate and the time entered on the unit will not be correct.

Because time setting must be performed immediately to be accurate, the unit is automatically updated as soon as the **Sync time with PC** button is clicked. (The unit should still be reset manually to fully implement the new time setting.) If other configuration changes were made – including daylight savings time and time zone settings – it is best to save the changes before using the sync feature (it is not necessary to restart the system). For additional information about saving configuration changes, see page 125.

Under certain circumstances, resetting the time may make it impossible to view some recorded video, including some video that is recorded after the time is set.

➪ *To update the time on the Video Gateway unit manually:*

1. Make sure the date, time, and time zone on the PC are correct.

   Note: The current date and time recorded on the clock of the Video Gateway unit appear in the **System Time** field.

   Note: If you have made other changes to the configuration, save them before continuing.

2. In the **Date and Time Settings** screen, click the **Sync time with PC** button. The date and time on the Video Gateway unit are set to match the date and time on the PC, a confirmation message appears at the top of the screen, and the **System Restart Page** is displayed with a confirmation message on the lower left of the screen.

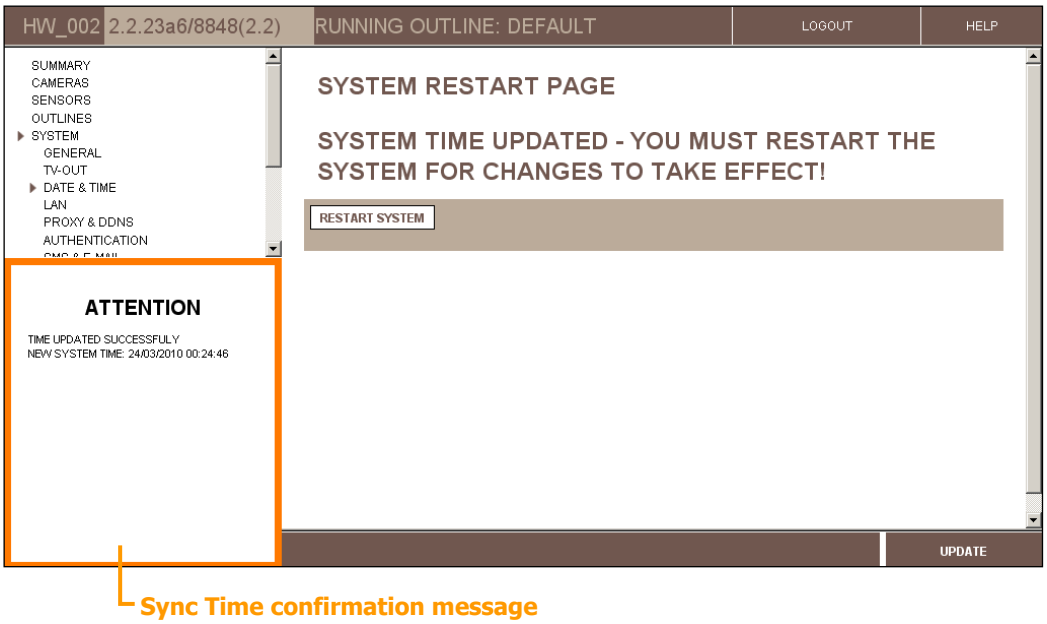


Figure 35: System Restart Page after manual time updating

In two cases, the screen that is displayed may differ from the one in figure 35: if there were unsaved updates when the time was synchronized, and if the clock was set ahead more than about 15 minutes. For information about handling these cases, see page 36.

3. Click **Restart System**. The unit restarts, and the time on the unit is fully updated. You are automatically logged out of the configuration utility, and a confirmation message appears:

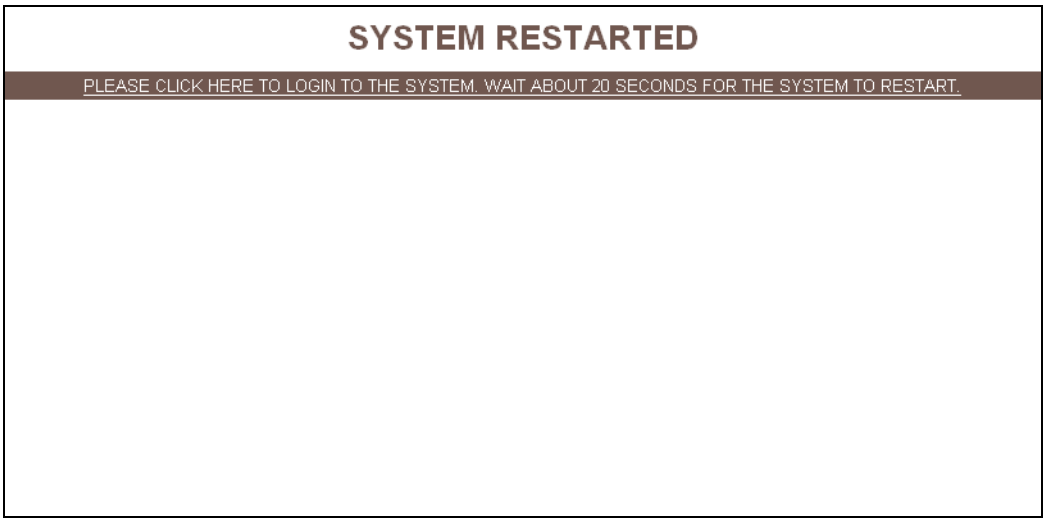


Figure 36: Restart confirmation message

Note: To continue configuring the unit, click the link in the message and log into the configuration utility again.

Note: If you do not reset the unit at this time, the time setting is partially implemented. The next time the unit is reset, the time change is fully implemented.

Under normal circumstances, after you click the **Sync time with PC** button, the **System Restart Page** appears as in figure 35. However, if you made changes to other configuration settings before you updated the time, and did not yet save them on the unit (i.e., you clicked **Update** in one or more of the screens, but did not yet save the changes in

the **Save Settings** page), the **System Restar**t page will include a message: "You have changes that need to be saved. Click here to go to update page."

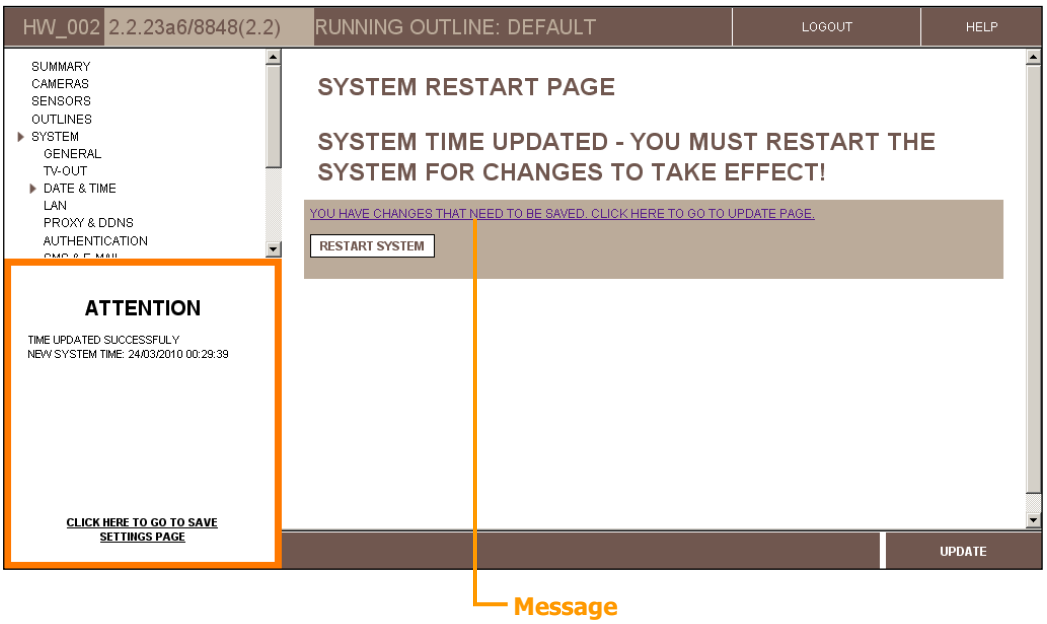


Figure 37: System Restart Page if the time was synchronized when there were unsaved changes

➪ *To save unsaved changes after the time was synchronized:*

1. Click the message. The **Save Settings** page opens.
2. In the **Save Settings** page, click **Save Changes to System**, and then, in the **System Restart** page, click **Restart System**.

In addition, if the unit clock was set ahead more than about 15 minutes during synchronization, instead of the **System Restar**t page, a message indicating that your configuration session has expired may appear. This does not mean that the time was not reset correctly. However, you should still restart the unit to fully implement the update, as follows:

➪ *To fully implement the time synchronization when the session expired during the process:*

1. Log into the configuration utility again.
2. Navigate to the **System Restart** page and click **Restart System**.

   Note: If you made changes to other configuration settings before you updated the time, and did not yet save them on the unit (i.e., you clicked **Update** in one or more of the screens, but did not yet save the changes in the **Save Settings** page), navigate to the **Save Settings** page, click **Save Changes to System**, and then, in the **System Restart** page, click **Restart System**.

Configuring Automatic Time Setting

The Video Gateway can automatically keep its clock up to date by connecting to an NTP time server at specified intervals. If you are configuring an MVG or a CVG-M, you can choose to use a land-based time server (on the internet or on a local network) or GPS-based time synchronization for this purpose.

NOTE: If the Video Gateway unit is not connected to the internet most or all of the time, does not have GPS support, and cannot connect to an alternative local time server, this feature will not keep the unit time accurate.

The default configuration includes a number of internet time servers to which the Video Gateway can connect in order to check the time. The unit automatically attempts to connect to a time server at regular intervals. Each time it attempts to connect, it begins with the first server listed. If it fails to connect to that server, it tries the next on the list, and so on. If you wish, you can replace any or all of the time servers on the list with other time servers, or add additional time servers, to a maximum of ten servers. The list can include time servers on the internet and on a local network.

For the MVG and the CVG-M, you can choose to use GPS-based time synchronization if GPS is enabled for the unit (see *Configuring GPS*, page 26). When you choose this option, the unit clock is constantly updated via GPS.

To enable automatic NTP-based time setting:

1. In the **Date & Time Settings** screen, if the **GPS Time** field appears, clear the **Enabled** checkbox.

   Note: The **GPS Time** field only appears for the MVG and CVG-M, and only if GPS is enabled in the **General System Settings** screen (see *Configuring GPS*, page 26).

2. Under **Update Frequency**, select the interval between time checks, in hours.

3. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

To enable automatic GPS-based time setting:

1. In the **Date & Time Settings** screen, under **GPS Time**, select the **Enabled** checkbox.

2. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

To disable all automatic time setting:

1. In the **Date & Time Settings** screen, if the **GPS Time** field appears, clear the **Enabled** checkbox.

2. Under **Update Frequency**, select **Disabled**.

3. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

To specify other time servers when NTP-based time-setting is enabled:

1. In the **Date & Time Settings** screen, under **Time Servers**, add the IP addresses or hostnames of additional time servers to the list, or replace existing IP addresses or hostnames with those of the time servers you want to use, as required.

   Note: Most time servers use port 123. If a time server you want to use uses a different port, you must specify the port after the IP address or hostname. (Separate the address and the port with a colon (**:**). For example: `192.168.1.15:345`)

2. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

LAN Settings

The LAN settings define how the Video Gateway should connect to a cabled LAN – a local network to which it is physically connected through an Ethernet network cable (connected to the **Ethernet Out** connector). These settings

are only relevant if the unit is connected to an external network via Ethernet cable. (For information about connecting the unit to an external network, please refer to the unit's installation guide.)

NOTE: MVG and UVG units have a built-in router. The LAN settings described here define how the router connects to the external LAN, not how the unit connects to the internal LAN managed by its router. The connection between the unit and the router is handled automatically by the system and does not require any configuration (see *Port Forwarding*, page 52).

The **LAN Settings** screen is used to select a connection method – static IP or DHCP – for the Video Gateway to use when connecting to a LAN. If a static IP is to be used, you must find out what IP to use, and what the appropriate network settings are for the IP, before you begin: This information can be acquired from your network administrator. If you want to be able to connect to the unit remotely through the LAN connection (to view video and/or to modify the unit's configuration) it is not generally recommended to use a dynamic IP address.

NOTE: If your network has a firewall, make sure that the port used by the unit (configured under **General System Settings**; see *Ports*, page 19), and port 10000, are forwarded from the gateway (router) to your Video Gateway for incoming communication.

To adjust the LAN settings:

1. In the **Main Menu**, under **System**, click **LAN**. The **LAN Settings** screen opens:

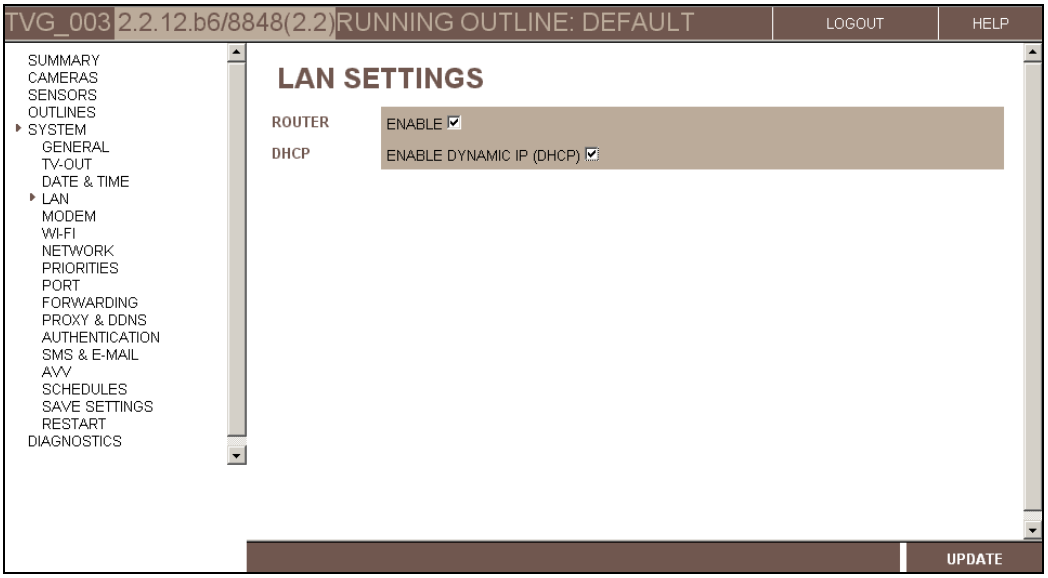


Figure 38: LAN Settings screen (MVG)

2. For the MVG and UVG, under **Router**, select **Enable**.

   For the CVG and CVG-M, if the unit is connected to a *SerVision* router, under **Router**, select **Enable**. Do not select this option if the unit is connected to any other type of router.

   Note: The **Router** field does not appear for HVG models.

3. If you want a dynamic IP address to be assigned to the unit by a DHCP server on the LAN, select the **Enable Dynamic IP (DHCP)** checkbox.

   Note: If this field is selected, you may not be able to access the unit remotely because the DHCP-assigned IP may change from time to time.

   Note: If this field is selected, the **IP Address**, **Subnet Mask**, **Default Gateway**, and **DNS Server** fields are not relevant and are hidden.

4. If the unit will have a static IP address, clear the **Enable Dynamic IP (DHCP)** checkbox. The fields required to configure the LAN settings are added to the screen.

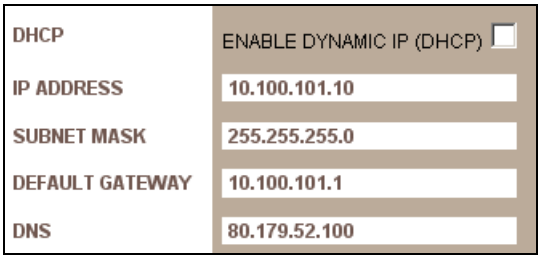


Figure 39: Static IP settings

Fill in the fields as follows:

Field	Description
IP Address	Specify the static IP address of the unit on the cabled LAN. The address should conform to the standards of the LAN.
Subnet Mask	Modify the LAN subnet mask as necessary. The subnet mask should be the one the LAN uses.
Default Gateway	Fill in the IP address of the gateway through which the LAN connects to the internet. If you do not know the IP address of the gateway, consult the network administrator or your ISP. **Note:** If this field is not filled in correctly, external network services will not be available through this network. These include accessing the unit remotely (even through proxy and DDNS services), SMS, e-mail notifications, and other services.
DNS	Fill in the IP address of the DNS server. A DNS server enables you to enter names instead of IP addresses for the proxy and DDNS servers. The DNS server may be operated by your internet provider (home installation) or on your network (some office installations). If you do not know the IP address of the DNS server, consult the network administrator or the ISP. **Note:** If this field is not filled in correctly, you will not be able to specify IP addresses as host names. For example, the address of the SMTP e-mail server will have to be defined as IP numbers. In addition, DDNS will not perform updates if there is no valid DNS address.

5. Click **Update** and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

MVG UVG CVG-M

Modem

The **Modem** screen is used to configure the way the unit connects to a cellular network. Modem support in models that use SerVision routers (MVG and UVG) is slightly different from modem support in the CVG-M, which does not have a router.

NOTE: If you use a cellular modem to make the Video Gateway accessible remotely, you may have to use a SerVision proxy server to facilitate client connections to the unit. For additional information, see *Proxy and DDNS Settings*, page 53.

MVG UVG

Video Gateway with Router

Modem settings configure the system to use the cellular modem connected to one of the unit's USB ports. Before you configure the modem, ask your cellular supplier for the correct settings. When the modem is correctly configured, the Video Gateway automatically attempts to establish a connection to the cellular network through it.

When the unit is connected to a cellular network, the *Modem* status displayed in the **System Summary** screen, in the network settings, is "Connected," and the IP address of the Video Gateway on the cellular network is displayed there.

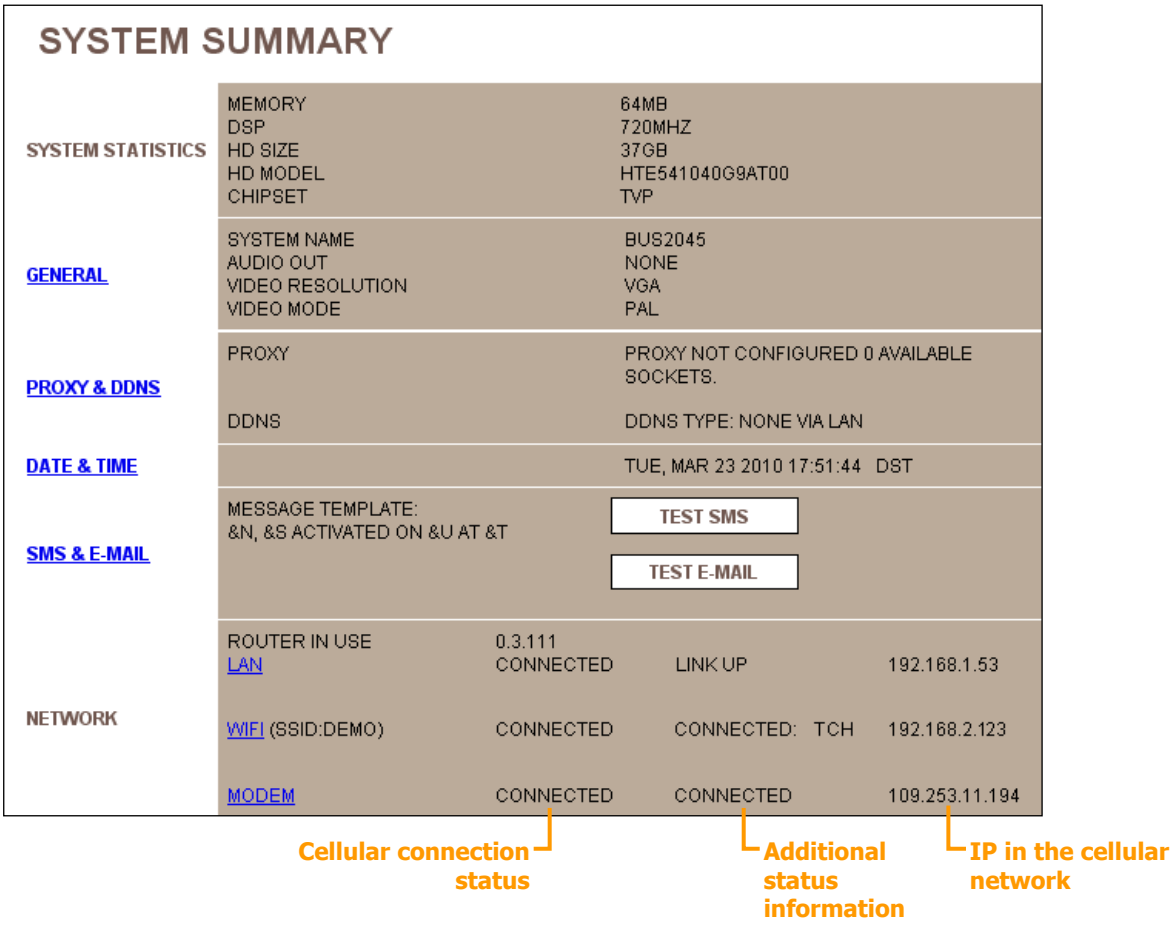


Figure 40: System Summary screen showing the Video Gateway connected to a cellular network

The system can be configured to automatically test the modem connection periodically once it is established. To do this, the unit uses a network feature called *LCP* to send a test "ping" to the network. If the connection is functioning properly, the network replies with a corresponding "ping" of its own. If the unit receives no response from the network, it assumes the connection is no longer functional, and attempts to reconnect. In most cases, it is recommended that this feature be enabled. This feature is not available on all cellular networks and, as such, it is recommended that you contact your cellular provider for more information as to whether it should be used.

The unit does not have to be restarted before a cellular connection is established. This makes it possible to quickly test the settings. Nevertheless, it is important to save the settings once they are correctly configured. Otherwise, the settings will be erased when the unit is next restarted.

NOTE: Unless you have made other changes to the configuration that require a system restart, it is not necessary to restart the system after the modem settings are saved on MVG and UVG units.

To configure the cellular modem connected to the unit:

1. In the **Main Menu**, under **System**, click **Modem**. The **Modem Configuration** screen opens:

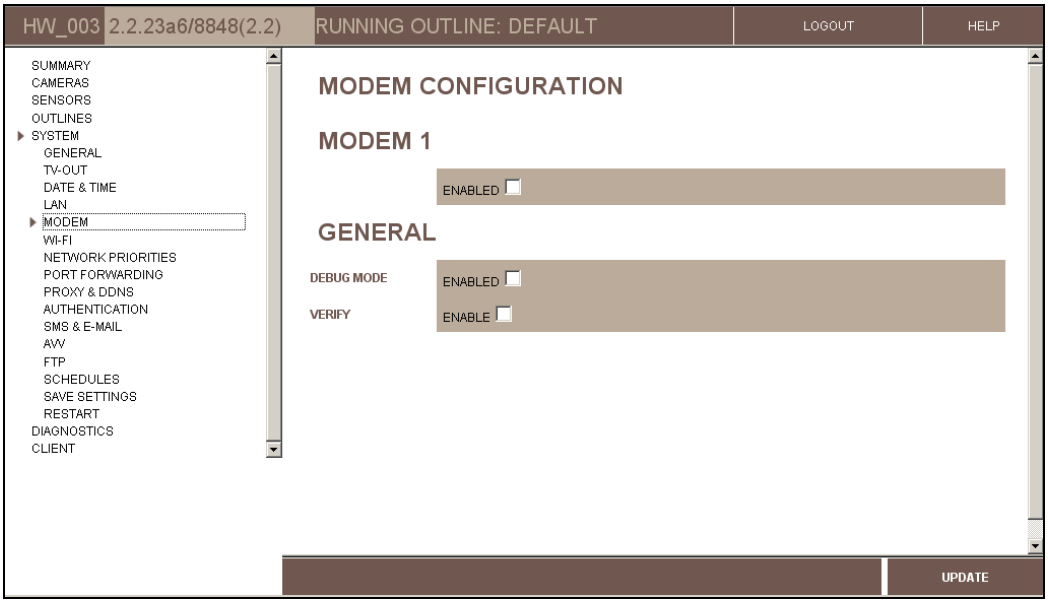


Figure 41: Modem Configuration screen

2. Under **Modem 1**, select **Enabled**. The fields required to configure the modem are added to the screen.

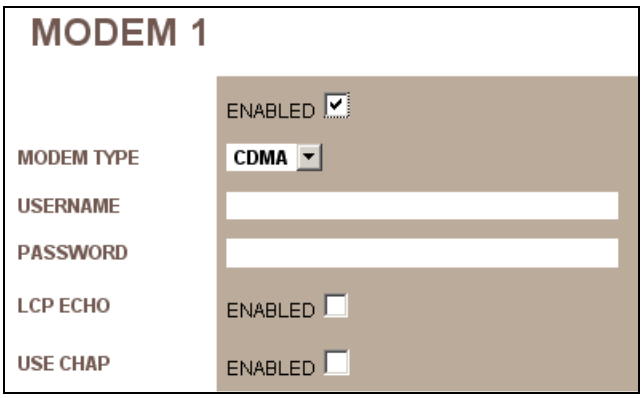


Figure 42: Modem 1 Enabled (CDMA settings)

3. Under **Modem Type**, select **CDMA** if the modem connects to a CDMA network, or **GSM** if it connects to a GSM network. If you select GSM, additional fields are added to the screen.

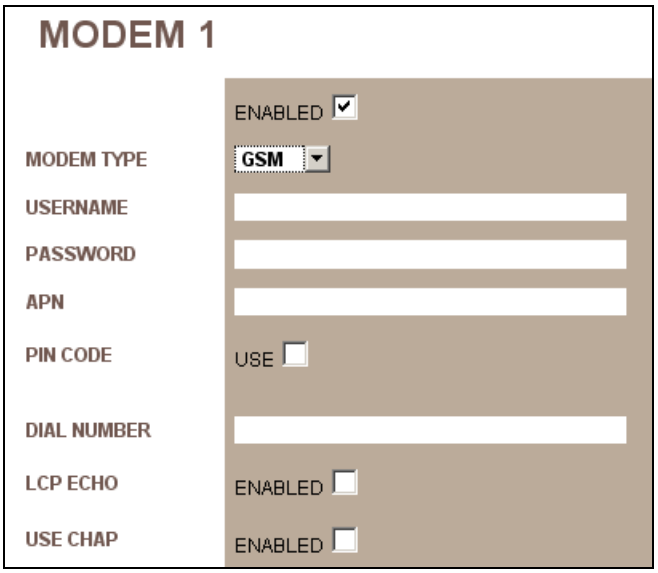


Figure 43: Modem 1 Enabled (GSM settings)

4. If you selected **CDMA**, fill in the fields as follows:

Field	Description
Username	If the cellular supplier requires a username, fill in the username.
Password	If the cellular supplier requires a password, fill in the password.
LCP Echo	Select **Enabled** if you want the system to periodically test the network connection after it is established (see page 41).
Use CHAP	Select **Enabled** if the cellular supplier uses CHAP authentication.

5. If you selected **GSM**, fill in the fields as follows:

Field	Description
Username	If the cellular supplier requires a username, fill in the username.
Password	If the cellular supplier requires a password, fill in the password.
APN	Fill in the APN of the cellular network.
PIN Code	If the SIM card of the modem requires a PIN to establish a connection, select **Use**. The **PIN Code** field is added to the screen. Type the PIN code into the field.
Dial Number	The phone number that the modem should dial to connect to the internet via the GSM cellular network. This number is normally **`*99#`** throughout the world.
LCP Echo	Select **Enabled** if you want the system to periodically test the network connection after it is established (see page 41).
Use CHAP	Select **Enabled** if the cellular supplier uses CHAP authentication.

6. Clear the **Debug Mode** checkbox unless you are instructed by SerVision technical support staff to select it.
7. If you want the unit to test the cellular network connection periodically, select **Verify**. The fields required to configure this option are added to the screen.

Figure 44: Verification settings

Fill in the fields as follows:

Field	Description
Verification Server	Specify the IP address or hostname of the server that the unit should ping in order to test the connection. This can be any device on the network whose connection you want to test. For example, if you want to ensure that the unit is connected to the internet, enter the URL of a server that can only be accessed via the internet, such as www.google.com. If the verification server does not respond to the ping, the unit attempts to reconnect to the cellular network. It continues to try to connect periodically, at the interval specified, until it succeeds. **Note:** For additional information about the ping command, see *Ping*, page 141.
Interval	Fill in the frequency of the verification tests, in seconds.

8. Click **Update**. The settings are immediately implemented on the unit. If a modem is connected to the unit, and the configuration settings are correct, the unit attempts to connect to the cellular network through the modem.
9. Save the settings to implement them permanently (see *Saving Configuration Changes*, page 125). It is not necessary to restart the system.

CVG-M

Modem settings configure the CVG-M to use the built-in cellular GSM modem to connect to a cellular network. The settings are implemented if a SIM card is installed in the unit. Before you configure the modem, ask your cellular supplier for the correct settings for the SIM card you are planning to use.

NOTE: If the SIM card requires a PIN, configure the modem settings as described below *before* you insert the SIM card into the unit. Otherwise, the unit may attempt to use the SIM card to connect to the network with an incorrect PIN. Attempts to use the SIM with an invalid PIN may cause the SIM card to be locked.

After you configure the modem settings, you must save them and restart the unit. From this point on, the CVG-M automatically attempts to establish a connection to a cellular network whenever it is not connected to a cable-based network.

NOTE: For additional information about selecting and installing a SIM card, and about CVG-M network connections in general, please refer to the installation guide.

To configure the cellular modem:

1. In the **Main Menu**, under **System**, click **Modem**. The **Modem Configuration** screen opens:

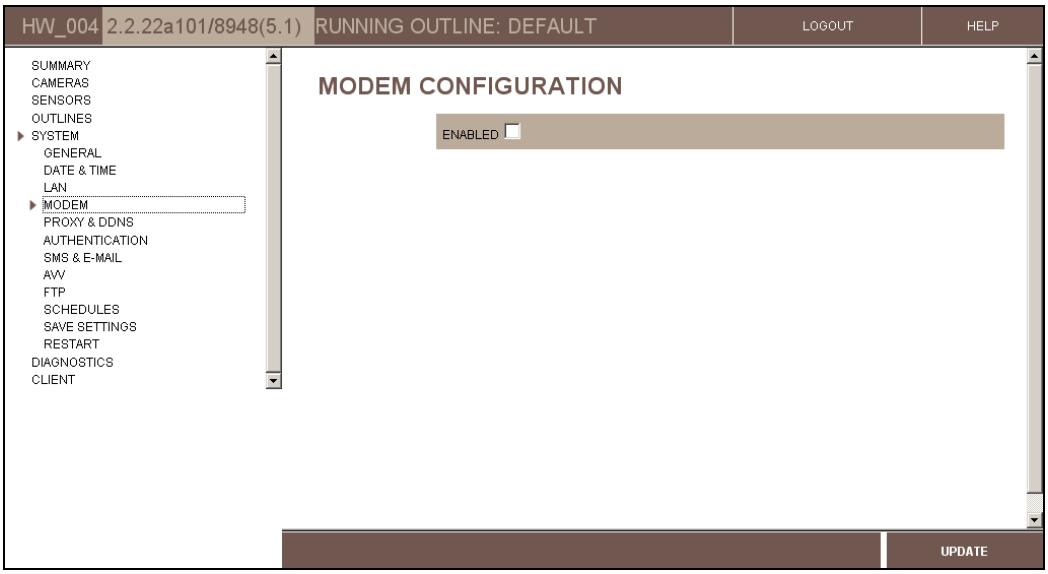


Figure 45: Modem Configuration screen

2. Select **Enabled**. The fields required to configure the modem are added to the screen.

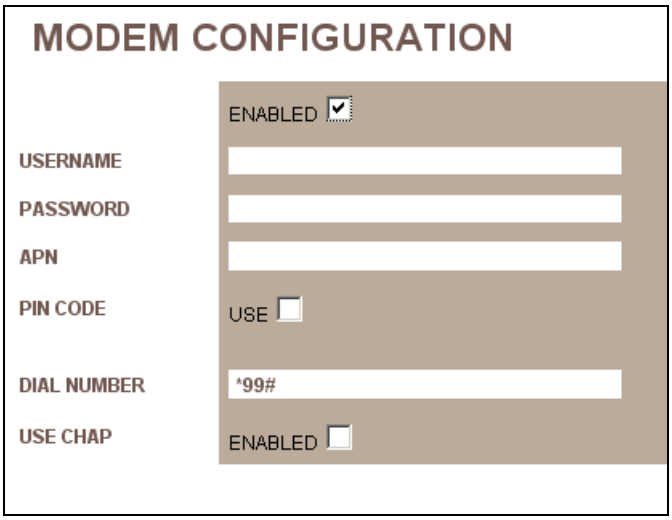


Figure 46: Modem enabled

3. Fill in the fields as follows:

Field	Description
Username	If the cellular supplier requires a username, fill in the username.
Password	If the cellular supplier requires a password, fill in the password.
APN	Fill in the APN of the cellular network.

Field	Description
PIN Code	If the SIM card of the modem requires a PIN to establish a connection, select **Use**. The **PIN Code** field is added to the screen. Type the PIN code into the field.
Dial Number	The phone number that the modem should dial to connect to the internet via the GSM cellular network. This number is normally **`*99#`** throughout the world.
Use CHAP	Select **Enabled** if the cellular supplier uses CHAP authentication.

4. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125). At that time, if the unit is not connected to a cable-based LAN, it will attempt to connect to the cellular network.

MVG UVG

WiFi

WiFi settings configure the system to use a WiFi card when one is connected to one of the unit's USB ports (see the installation guide). You can specify up to ten WiFi access points to which you want the router to be able to connect. When the WiFi card is correctly configured, the router automatically establishes a connection to one of the specified wireless networks if its access point (hotspot) is within range. If the access point is connected to the internet, the Video Gateway can use this connection to connect to the internet in order to send and receive data.

When the unit is connected to a WiFi network, the *WiFi* status displayed in the **System Summary** screen, in the network settings, is "Connected," and the Video Gateway's IP in the wireless network is displayed.

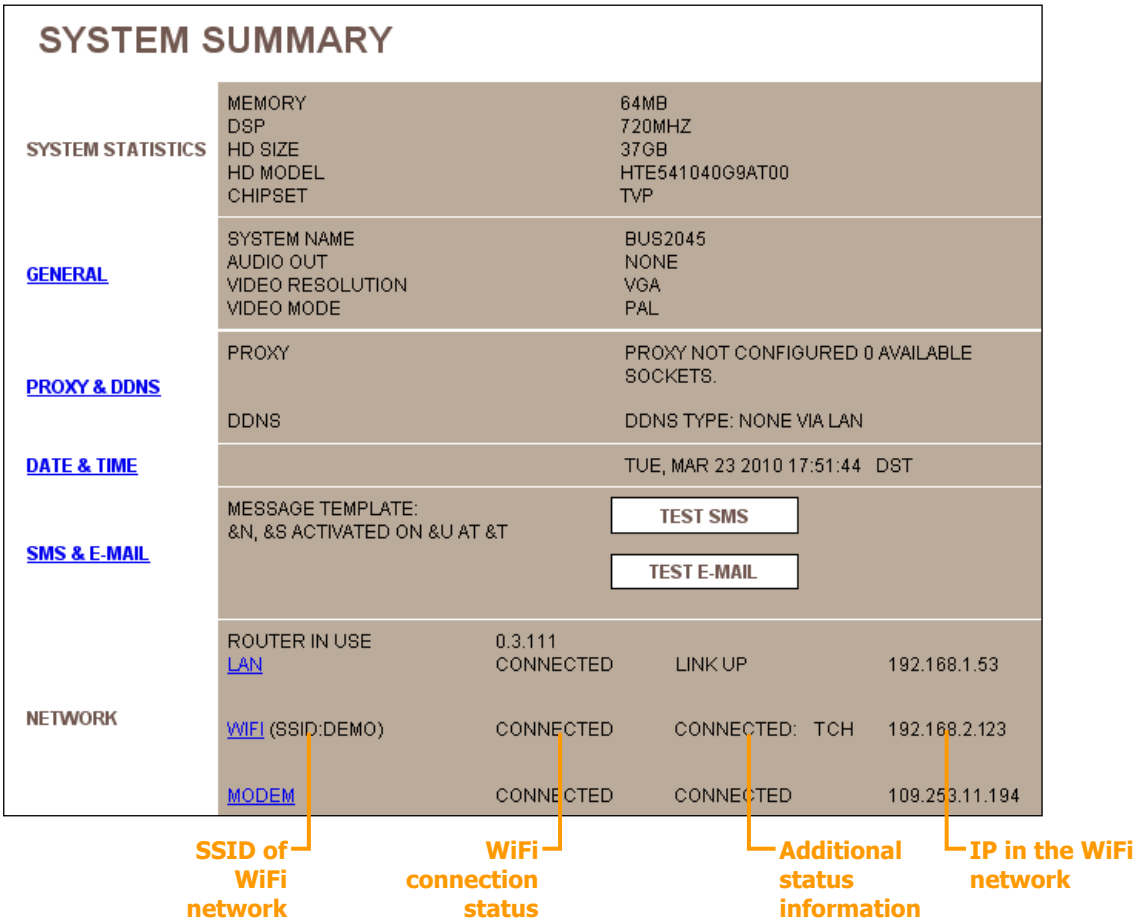


Figure 47: System Summary screen showing WiFi connected to access point

In order to connect to an access point, you must supply its *service set identifier* (SSID), which is essentially the name of the wireless network.

In addition, many access points employ an *encryption key* to prevent unauthorized connections. If the access point you specify requires an encryption key, you must supply this key if you want the unit to connect to the access point.

NOTE: Only WEP encryption is supported at this time. The unit cannot connect to WiFi networks that use other encryption methods (such as WPA).

The unit can save the SSIDs and settings of up to ten access points. If you specify more than one SSID, you can prioritize them to indicate which ones you want the unit to connect to when more than one is in range.

You can configure access points even if no wireless card is connected to the unit, or when the access points are not within range of the unit. When a wireless card is installed, you can use it to help you add access points that are in range. The wireless card detects all of the access points that are within range of its current location and automatically supplies the SSIDs of those access points.

By default, the unit is assigned a dynamic IP address in the wireless network when it connects to the access point. If the unit will only need to use the wireless network for outgoing connections to the internet, this is enough. If you need incoming access to the unit – you want to be able to access the Video Gateway remotely – you should assign it a static IP address.

After the wireless settings are configured, the unit does not have to be restarted before a wireless connection is established. This makes it possible to quickly test the settings. Nevertheless, it is important to save the settings once they are correctly configured. Otherwise, the settings will be erased when the unit is next restarted.

NOTE: Unless you have made other changes to the configuration that require a system restart, it is not necessary to restart the system after the WiFi settings are saved.

To configure an access point:

1. In the **Main Menu**, under **System**, click **WiFi**. The **WiFi Configuration** screen opens. (This may take a minute or two.)

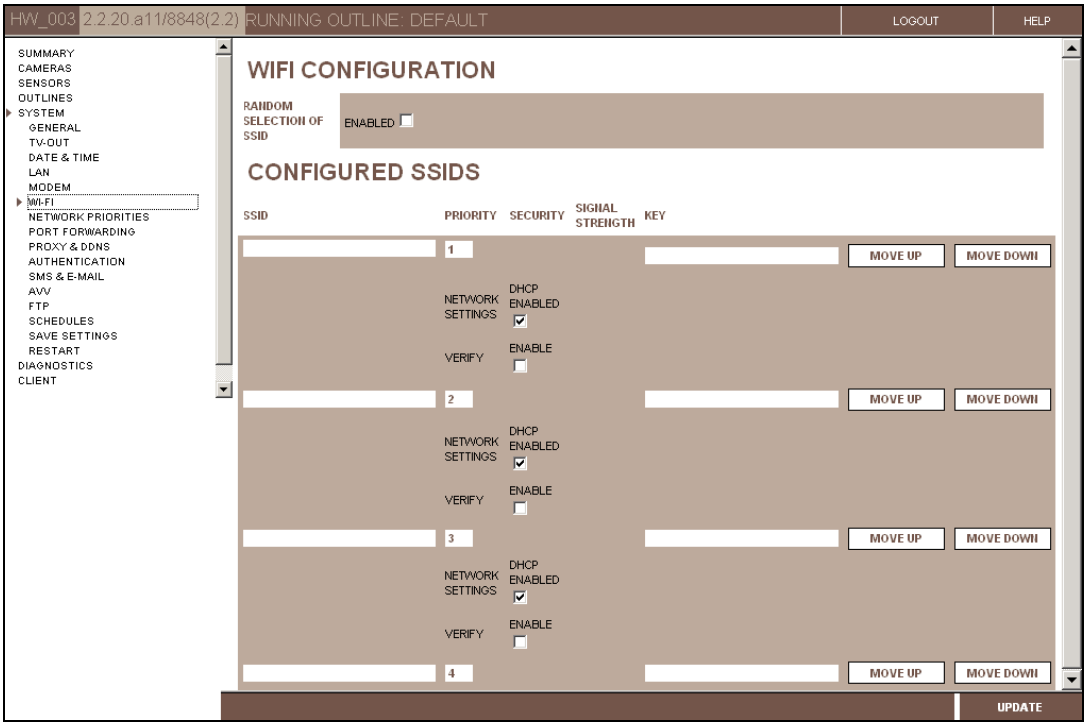


Figure 48: WiFi Configuration screen

2. If you will be configuring more than one SSID, under **Random Selection of SSID**, do one of the following:
   - Select **Enabled** if you want the unit to remain connected to the current access point as long as it can, even if an access point with a higher priority level becomes available.
   - Clear **Enabled** if you want the unit to disconnect from lower-priority access points when higher-priority access points become available.
3. Under **Configured SSIDs**, fill in the required information for each access point to which you want the unit to be able to connect, as described in steps 4–8 below.
4. Under **SSID**, fill in the SSID of the access point.

   Note: If a wireless card is connected to the unit, access points that are detected within range of the unit are listed under **SSIDs in Range** at the bottom of the screen. Click **Add SSID** to add a detected SSID to the list of configured SSIDs. (If a detected access point is in the list of configured SSIDs, it does not appear in the list of detected access points.)

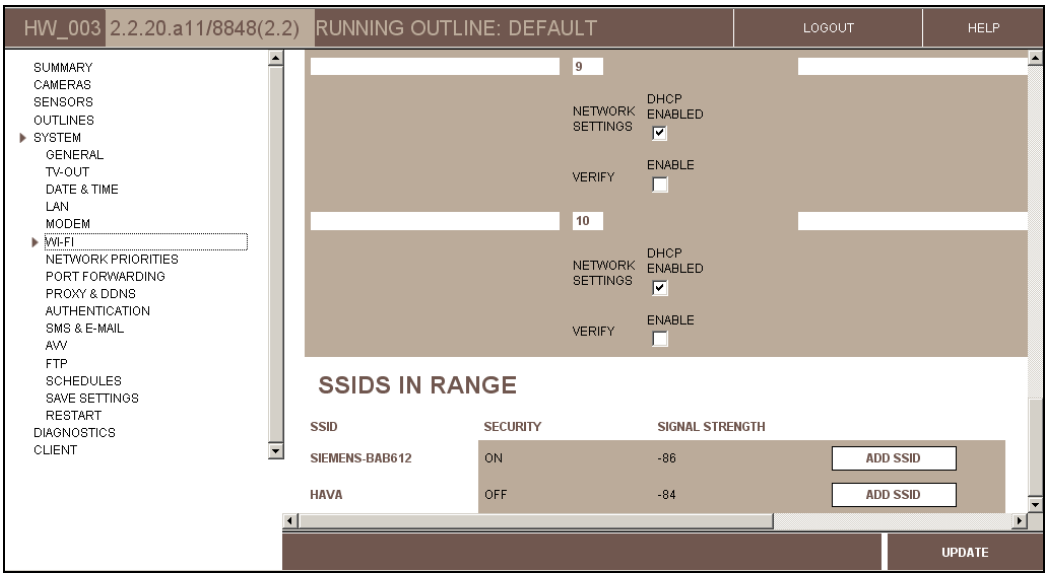


Figure 49: SSIDs in Range

5. If the access point requires an encryption key, under **Key**, fill in the encryption key.
6. If you want to assign a static IP to the unit, clear the **DHCP Enabled** checkbox. The fields required to configure the static IP are added to the screen.

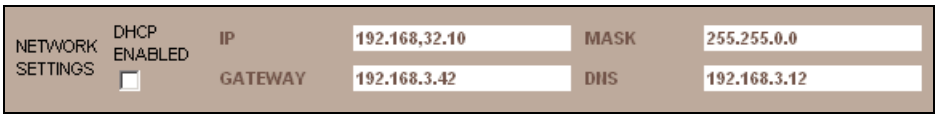


Figure 50: Static IP settings

Fill in the fields as follows:

Field	Description
IP Address	Specify the static IP address of the unit in the wireless network. The address should conform to the standards used in the wireless network.
Mask	Fill in the subnet mask used in the wireless network.
Default Gateway	Fill in the IP address (on the wireless network) of the gateway used for WAN or internet access. If you do not know the internal IP address of the gateway, consult the network administrator. **Note:** If this field is not filled in correctly, external network services will not be available through this network. These include accessing the unit remotely (even through proxy and DDNS services), SMS and e-mail notifications, and other network services.
DNS	Fill in the IP address of the DNS server used by the access point. A DNS server enables you to enter names instead of IP addresses for the proxy and DDNS servers. If you do not know the IP address of the DNS server, consult the network administrator. **Note:** If this field is not filled in correctly, you will not be able to specify IP addresses as host names. For example, the address of the SMTP e-mail server will have to be defined as IP numbers. In addition, DDNS will not perform updates if there is no valid DNS address.

7. If you want the unit to test the connection to this access point periodically, select **Verify**. The fields required to configure this option are added to the screen.

Figure 51: Verification settings

Fill in the fields as follows:

Field	Description
Verification Server	Specify the IP address or hostname of the server that the unit should ping in order to test the connection. This can be any device on the network whose connection you want to test. For example, if you want to check that the unit is connected to the WiFi network, enter the IP of a PC or other device that is normally connected to the WiFi network. Alternatively, if you want to ensure that the unit is connected to the internet, enter the URL of a server that can only be accessed via the internet, such as www.google.com. If the verification server does not respond to the ping, the unit automatically attempts to reconnect to the access point and, failing that, to other configured access points. **Note:** For additional information about the ping command, see *Ping*, page 141.
Interval	Fill in the frequency of the verification tests, in seconds.

8. If you would like to change the priority level of the access point, click **Move Up** or **Move Down** as required.
9. Click **Update**. If a WiFi card is connected to the unit, the unit attempts to connect to the configured access points. It connects to the first access point it can. "Connected" appears below the SSID of the access point to which the unit is connected.

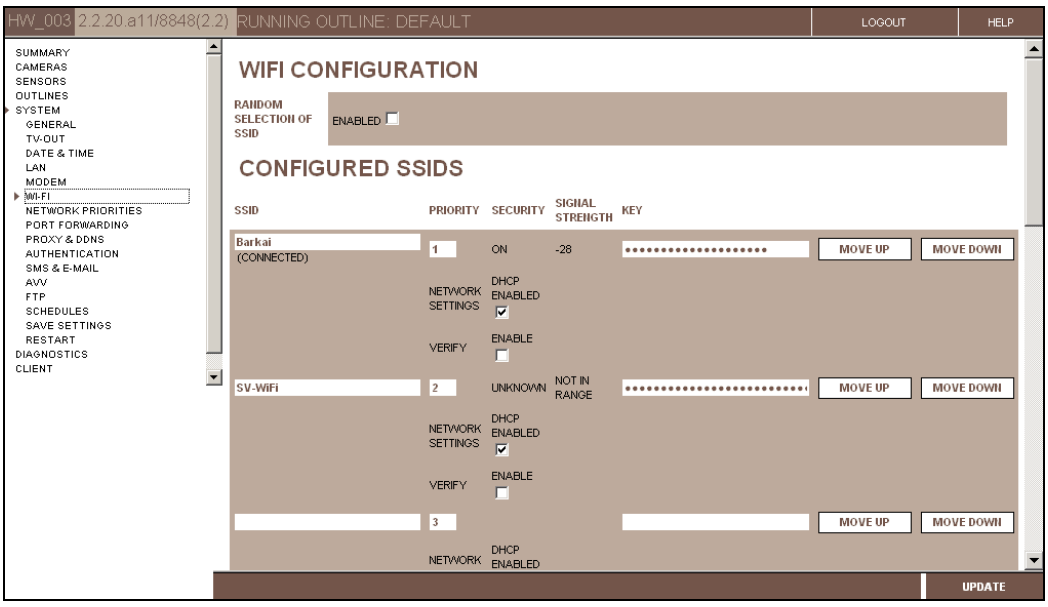


Figure 52: Video Gateway connected to "Barkai" access point

If **Random Selection of SSID** is enabled, the unit remains connected to that access point until the connection is lost. If **Random Selection of SSID** is cleared, it disconnects from the access point if it can connect to a higher-priority access point.

Note: If you install a WiFi card when the unit is running, you must restart the unit to access wireless networks.

10. Save the settings to store them permanently (see *Saving Configuration Changes*, page 125). It is not necessary to restart the system.

Network Priorities

If your system is configured to connect to more than one network at a time, it can use any of the available networks for outgoing connections such as connecting to a proxy server or sending an e-mail notification. In this case, you should rank the available networks to indicate which one you would prefer the system to use for outgoing communications. For example, if the unit can connect to both a WiFi network and a cellular network, you would probably want to give the WiFi network priority over the cellular network, because it is faster and cheaper to use. In this case, the system would use the WiFi network whenever it was available; if it was not available, the system would use the cellular network instead.

The unit does not have to be restarted before changes to the network priorities settings are implemented. Nevertheless, it is important to save the settings once they are correctly configured. Otherwise, the settings will be erased when the unit is next restarted.

NOTE: You can manually override the selected network priorities for specific types of outgoing communications. When this is possible, the **Use** field appears in the relevant configuration screen. This field allows you to select a specific network to use for proxy connections, DDNS connections, sending e-mail notifications, and sending SMS notifications. For additional information, please refer to the relevant section of this guide.

NOTE: Unless you have made other changes to the configuration that require a system restart, it is not necessary to restart the system after the network priorities settings are saved.

To prioritize the network connections:

1. In the **Main Menu**, under **System**, click **Network Priorities**. The **Network Priorities** screen opens, and displays the three networks – **LAN**, **WLAN** (WiFi), and **Cell** (Modem) – in their current order of priority (the top network is ranked highest).

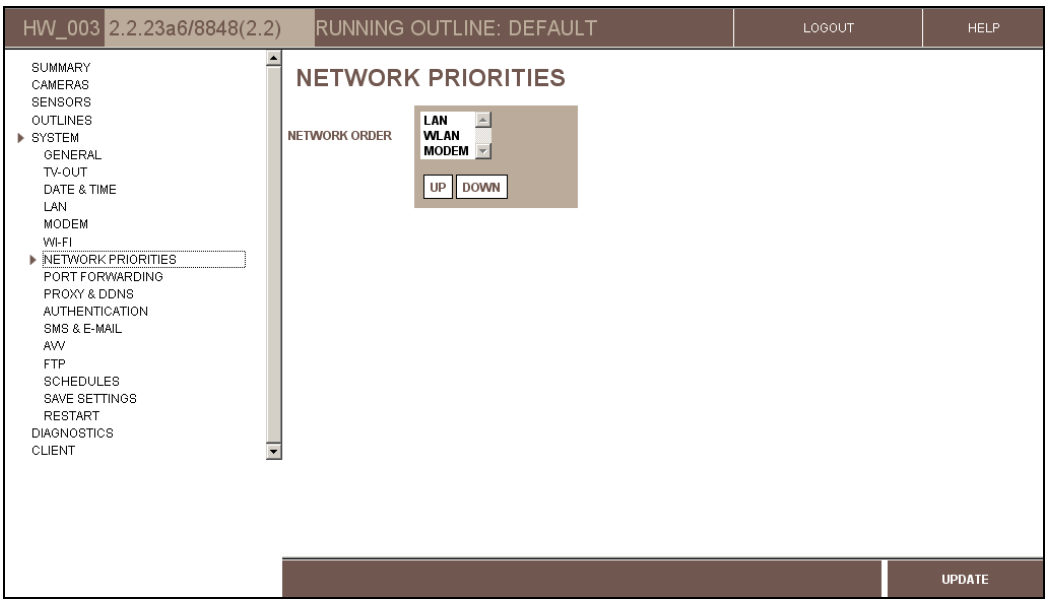


Figure 53: Network Priorities screen

2. To change the position of a network in the ranking, select the network type and then click **Up** or **Down**.

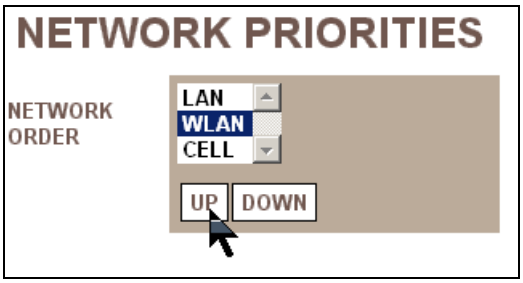


Figure 54: Moving a network up in the ranking

3. Click **Update**. The settings are immediately implemented on the unit.
4. Save the settings to implement them permanently (see *Saving Configuration Changes*, page 125). It is not necessary to restart the system.

MVG UVG

Port Forwarding

Port forwarding makes it possible for remote devices to access devices within the unit's local network. Each device that you want to make accessible to incoming connections is linked with a particular port of the router. To connect to the device remotely, you use the external IP address of the router (the IP address of the Video Gateway on the external network), and the assigned port number.

NOTE: Be sure to assign a static internal IP to the device before you set up port forwarding to it (see *Appendix C: Networks Managed by SerVision Routers*, page 201)

To configure port forwarding for a device connected to the unit's router:

1. In the **Main Menu**, under **System**, click **Port Forwarding**. The **Port Forwarding** screen opens and displays a list of the ports that are already open for remote access and the internal IPs of the devices to which they provide access.

   Note: The system and configuration ports of the unit in the router's network (see *Ports*, page 19) are defined automatically by the router and cannot be modified.

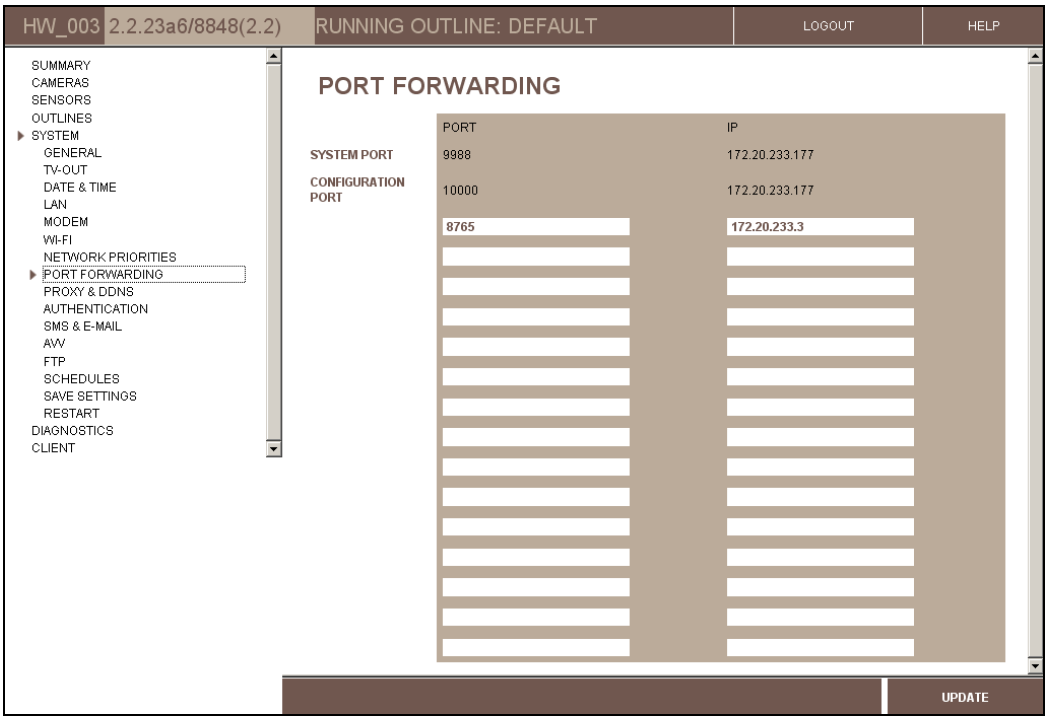


Figure 55: Port Forwarding screen

2. In the next available row in the table, fill in the fields as follows:

Field	Description
Port	The number of the port to assign to the device. You can choose any number in the range 1–65535 that is not already in use.
IP	The internal IP of the device

Figure 56: Adding a port

3. Click **Update** and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Proxy and DDNS Settings

Proxy services make it possible for clients to connect to Video Gateway units that cannot be accessed directly. Dynamic DNS (DDNS) enables clients to connect to Video Gateway units that do not have fixed public IP addresses.

A proxy server is used to enable client applications to connect to Video Gateway units like the Video Gateway when the connection cannot be directly *initiated* by the client. Typically, this occurs when the Video Gateway connects to the internet through the cellular network. It may also occur if the Video Gateway connects to the

internet through a cable-based connection that does not have a public IP address. The proxy server functions as an intermediary that relays requests and data between the Video Gateway and clients. When you enable the proxy service on a Video Gateway, the Video Gateway initiates a connection with the proxy server and registers with it each time it connects to a network. Clients can then connect to the Video Gateway indirectly by connecting to the proxy server. For additional information about proxy services in general and about proxy servers that are available for use please contact your vendor.

DDNS is designed to facilitate internet connections to systems that use dynamic public IP addresses (see *Appendix B: LAN Settings*, page 200). When you enable a DDNS on a Video Gateway, the Video Gateway is assigned a name. The Video Gateway registers with the DDNS service each time it connects to the internet, and relays its current public IP address to the service. Client applications connect to the Video Gateway by using its name rather than its public IP address. The DDNS service ensures that the correct public IP address is linked to the name at all times, even when the IP changes.

Three DDNS services are supported by the system: SV-DDNS *(*SerVision's DDNS service), *No-IP*, and *DynDNS*. For information about the SV-DDNS service, consult your vendor. For information about the *No-IP* and *DynDNS* DDNS services, consult their websites (www.no-ip.com and www.dyndns.com).

To adjust the Proxy and DDNS settings:

1. In the **Main Menu**, under **System**, click **Proxy & DDNS**. The **Proxy and DDNS Settings** screen opens:

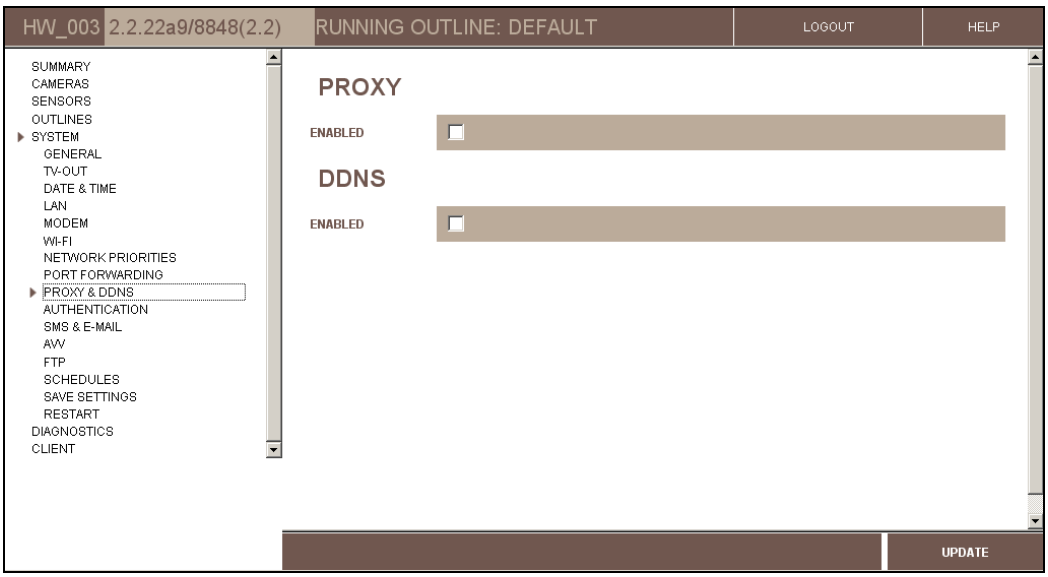


Figure 57: Proxy and DDNS Settings screen

2. If you are using a proxy for remote access, under **Proxy**, select **Enabled**. The fields required to configure the proxy settings are added to the screen.

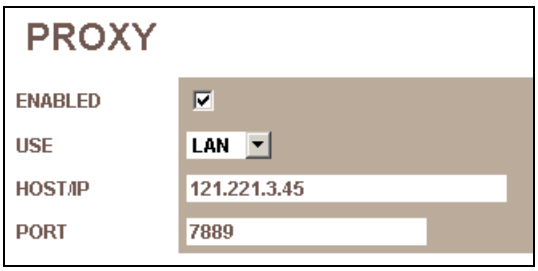


Figure 58: Proxy settings

Fill in the fields as follows:

Field	Description
Use	**MVG and UVG:** Select the network connection to use to connect to the proxy server: • **Any:** The unit can use any available network connection; it will connect using the highest priority connection available (as defined under **Network Priorities**; see *Network Priorities*, page 51). • **LAN:** The unit will only use a LAN connection. If none is available, the unit will not connect to the proxy server. • **WiFi:** The unit will only use a WiFi connection. If none is available, the unit will not connect to the proxy server. • **Modem:** The unit will only use a Modem connection. If none is available, the unit will not connect to the proxy server. **HVG, CVG, CVG-M:** Not currently in use.
Host/IP	Fill in the IP address or hostname of the proxy server.
Port	Fill in the access port of the proxy server.

3. If you are using a DDNS service, under **DDNS**, select **Enabled**. The fields required to configure the DDNS settings are added to the screen.

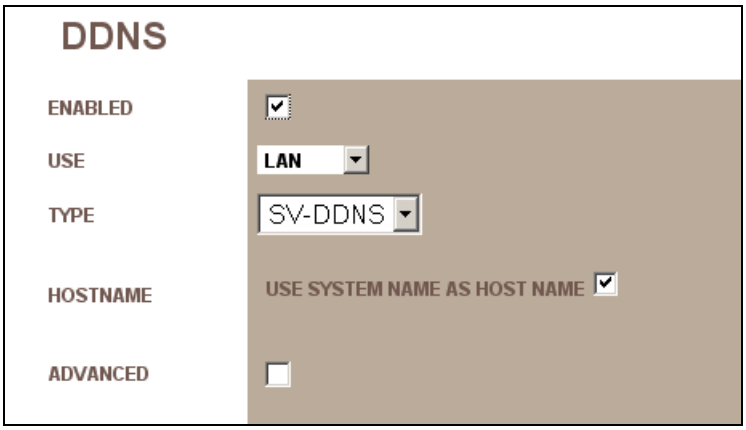


Figure 59: DDNS settings

Fill in the fields as follows:

Field	Description
Use	**MVG and UVG:** Select the network connection to use to connect to the DDNS server: • **Any:** The unit can use any available network connection; it will connect using the highest priority connection available (as defined under **Network Priorities**; see *Network Priorities*, page 51). • **LAN:** The unit will only use a LAN connection. If none is available, the unit will not connect to the DDNS server. • **WiFi:** The unit will only use a WiFi connection. If none is available, the unit will not connect to the DDNS server. • **Modem:** The unit will only use a Modem connection. If none is available, the unit will not connect to the DDNS server. **HVG, CVG, CVG-M:** Not currently in use.
Type	Select the type of DDNS service. **Note:** If you select *No-IP* or *DynDNS*, the **Username**, **Password**, and **Confirm Password** fields are added to the screen, and the **Advanced** field is removed from the screen.
Hostname	Fill in the hostname of the DDNS server. If you are using either *No-IP* or *DynDNS*, these values should have been supplied to you when you set up your account. If you are using the SerVision *SV-DDNS* service, the default hostname is the Video Gateway's default system name. This name is used when **Use system name as hostname** is selected. You can modify this name as you wish. To do so, clear the **Use system name as hostname** checkbox. A text field is added to the screen. Fill in the name you want to use. The name you choose should not include any spaces or underscores. In addition, you should make sure the name is unique. For example, you can include your name or the name of your company in the hostname to ensure it is unique. The complete hostname on the SerVision SV-DDNS server will be composed of the name you type plus **`.TVG.CC`**. For example, if you type "JaneSmytheOffice," the hostname on the server is **`JaneSmytheOffice.TVG.CC`**. **Note:** Once DDNS is set up, changes to the server name will have no effect on the DDNS settings.

4. If you are using either the *No-IP* or the *DynDNS* DDNS service, fill in the **Username** and **Password** fields. The username and password should have been supplied to you by *No-IP* or *DynDNS* when you set up your account there. Under **Confirm Password**, type the password a second time to ensure you typed it correctly.

   Note: SerVision cannot provide support for problems related to the *No-IP* or *DynDNS* DDNS services. For technical support, please contact the service providers.

5. If you are using the *SV-DDNS* service and you want to change the address of the DDNS server, select **Advanced**. The fields required to specify the server are added to the screen.

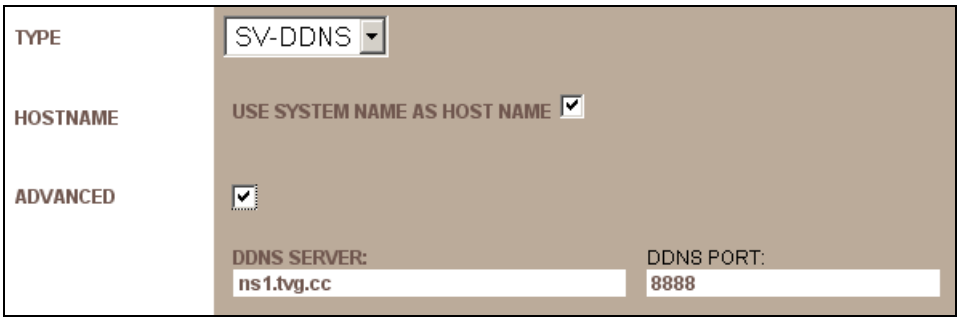


Figure 60: Advanced SV-DDNS settings

Fill in the fields as follows:

Field	Description
DDNS Server	Fill in the IP address or hostname of the SV-DDNS server.
DDNS Port	Fill in the access port of the SV-DDNS server.

6. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Authentication

Access to the system is controlled by username-password authentication. You can create up to ten users. For each user, you can define a specific combination of system permissions. Users can be assigned any or all of the following permissions:

Permission	Description
Live Video	The user can connect to the unit through a client application and view live video.
Recorded Video	The user can connect to the unit through a client application and view recorded video.
Camera Control	The user can connect to the unit through a client application and control cameras using their PTZ controllers. **Note:** The Live Video permission must also be selected in order for the user to make use of this feature.
Configuration	The user has full access to the unit's configuration utility and can modify the configuration settings.

By default, two users are defined:

- A user with permissions for all of the system's features. The default username for this user is **`svuser`** and the password is **`servconf`**.
- A user with all client permissions – live video, recorded video, and camera control – but no configuration permission. The default username for this user is **`anonymous`** and the password is **`guest`**.

You can modify the default settings and add new users as necessary. It is recommended that you change the default usernames and passwords of both of the default users.

NOTE: Multiple users can log into the system simultaneously using the same username and password.

To modify usernames and passwords:

1. In the **Main Menu**, under **System**, click **Authentication**. The **Authentication** screen opens. Each row in the screen defines the settings for one user.

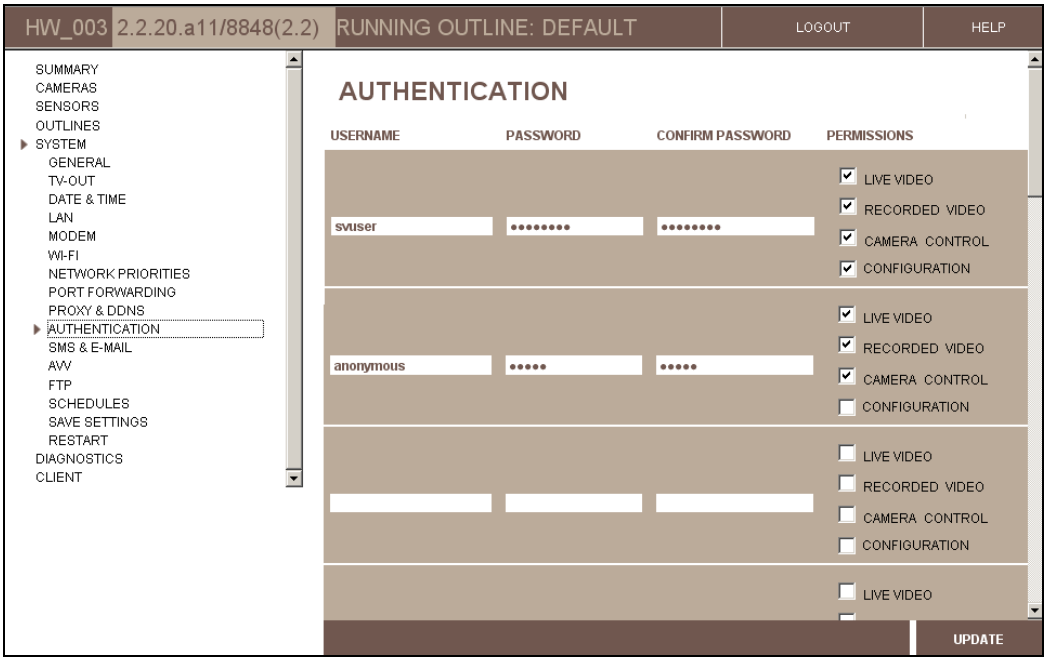


Figure 61: Authentication screen

2. In each row, define or modify the settings of one user, as necessary:
   - Under **Username**, specify the username of the user.
   - Under **Password**, specify the password for the username.
   - Under **Confirm Password**, specify the password a second time to ensure you entered it correctly.
   - Under **Permissions**, select the permissions you want the user to have.
3. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

SMS and E-mail Notifications

You can choose to send an SMS or an e-mail to a predefined list of people whenever events of specified types are detected.

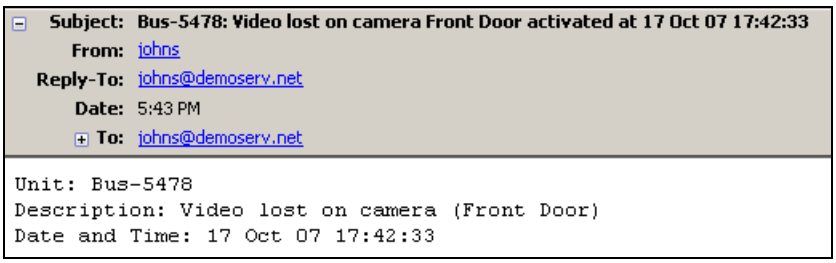

Subject: Bus-5478: Video lost on camera Front Door activated at 17 Oct 07 17:42:33
From: johns
Reply-To: johns@demoserv.net
Date: 5:43 PM
To: johns@demoserv.net
Unit: Bus-5478
Description: Video lost on camera (Front Door)
Date and Time: 17 Oct 07 17:42:33

Figure 62: E-mail event notification

If you opt to write-protect recorded video (see *Advanced Recorder Settings*, page 97), you can also choose to send an e-mail warning message when the disk space allocated to a recorder is almost full or is entirely full.

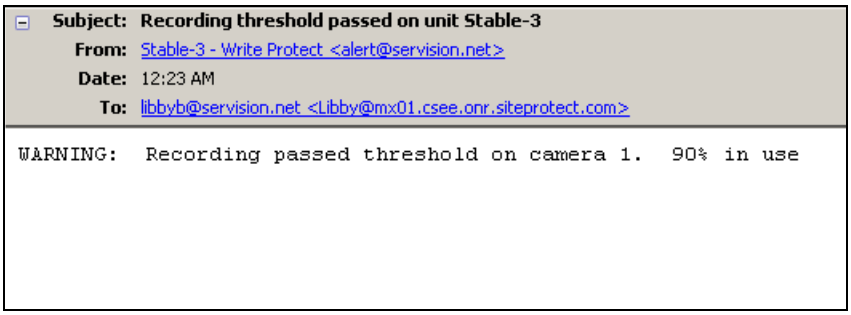


Figure 63: Recorder almost full warning

In order to use the SMS functionality, you must set up an account with Clickatell (http://www.clickatell.com). In order to send e-mails, you must have a valid SMTP e-mail account that can be used as the "sender" of the e-mail messages.

NOTE: Web-based e-mail does not always support SMTP settings.

E-mail notifications and warnings contain standard messages that include the name of the unit and information about the event or situation that caused the message to be sent. Depending on the notification settings of each device, e-mail notifications of events may sometimes include snapshots of the first frame of the event. If full-sized VGA or D1 recording is activated (see *Advanced Recorder Settings*, page 97), you can choose whether images sent with e-mail notifications are sent as standard-sized images (SIF or CIF), or large images (VGA or D1). If AVV is activated (see *Automatically Uploading Video to an AVV Server*, page 64), an image and a link to the uploaded video are always included.

You can specify the text of SMS messages that are sent by defining a *message template*. The template can contain any text you wish. It can also contain variables that will be replaced by the system with relevant values in the actual message. For example, the message can include the name of the recipient, the time, and the name of the device that triggered the event. For additional information, see *SMS Message Templates*, page 63.

Once you have configured the notification settings, you can test them by sending a sample notification. For additional information, see *Testing Notification Settings*, page 64.

This section explains how to configure the settings that make it possible for the system to send notifications. Messages are only sent if the device triggering an event – a camera, sensor, or activator – is configured to send notifications of events or warnings about disk usage. For information on configuring a device to send notifications, see the sections about configuring that type of device:

- *Video Motion Detection (VMD)*, page 88
- *Configuring Video Lost*, page 94
- *Advanced Recorder Settings*, page 97
- *Configuring Sensor and Activator* Settings, page 110

To configure SMS and e-mail notification settings:

1. In the **Main Menu**, under **System**, click **SMS & E-mail**. The **SMS and E-mail** screen opens:

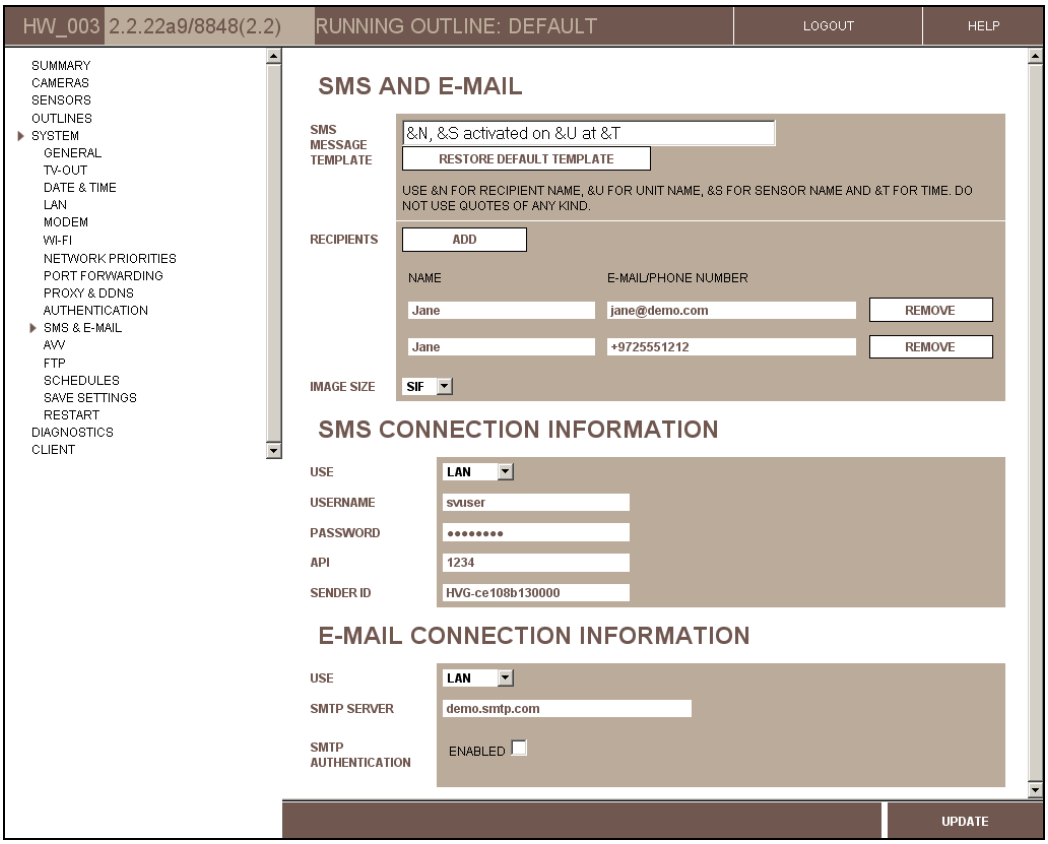


Figure 64: SMS and E-mail screen

2. Under **Message Template**, modify the text of the message that should be sent to the SMS recipients on the list, as necessary. The message can contain up to 45 characters, including spaces. It should not include quotation marks of any kind (`"`, `'`, or `` ` ``).

   Note: The message text can contain variables that are replaced by the system with relevant values in the actual message. For example, the message can include the name of the device that triggered the event. For additional information, see *SMS Message Templates*, page 63.

   The default message includes the recipient's name, the name of the Video Gateway unit, the name of the device that triggered the event, and the time at which the event was triggered. If the message has been changed from its default version, and you want to replace the current message text with the default text, click **Restore Default Template**.

3. For each recipient of an SMS or e-mail message, under **Recipients**, click **Add**. A row is added to the list of recipients.

Figure 65: New recipient row

Fill in the fields as follows:

Field	Description
Name	The name of the person who will receive an SMS or e-mail message when an event occurs (up to 20 characters).

Field	Description
E-mail / Phone number	Fill in the phone number or e-mail address of the recipient. **SMS:** Enter the phone number in the international format, with no spaces. The number is made up of the country code, the area code and the phone number. Example: For the US phone number 212-555-1212, enter +12125551212. **E-mail:** Enter the e-mail address. Example: johns@demoserv.net

Note: To send both an SMS and an e-mail to the same person, list the person twice in the list of recipients; fill in the SMS phone number in one of the listings, and the e-mail address in the other listing.

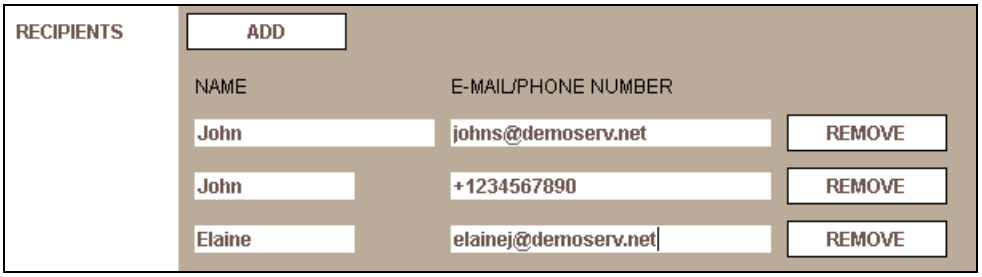


Figure 66: Recipients list

4. Under **Image Size**, select the size of the JPEG image that will be attached to e-mail notifications that contain images. If the unit is configured to use VGA video resolution, you can choose either full-size VGA or the smaller SIF. If the unit uses D1 video resolution, you can choose either full-size D1 or smaller CIF. For additional information about video resolutions, see *Video Resolution*, page 19.

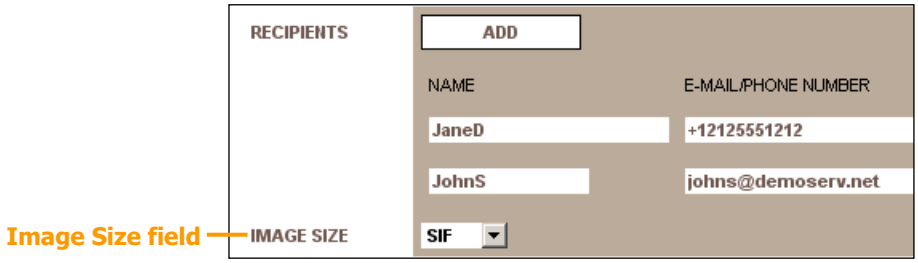


Figure 67: Image Size field

5. If you want to send SMS notifications, under **SMS Connection Information**, fill in the fields as follows:

Field	Description
Use	**MVG and UVG:** Select the network connection to use to connect to the SMS server: • **Any:** The unit can use any available network connection; it will connect using the highest priority connection available (as defined under **Network Priorities**; see *Network Priorities*, page 51). • **LAN:** The unit will only use a LAN connection. If none is available, the unit will not connect to the SMS server. • **WiFi:** The unit will only use a WiFi connection. If none is available, the unit will not connect to the SMS server. • **Modem:** The unit will only use a Modem connection. If none is available, the unit will not connect to the SMS server. **HVG, CVG, CVG-M:** Not currently in use.
Username	Fill in the username of your Clickatell account.
Password	Fill in the password of your Clickatell account.
API	Fill in the API ID of your Clickatell account.
Sender ID	Fill in the Sender ID that was assigned by Clickatell.

Note: If you do not have an active Clickatell account, open one at http://www.clickatell.com.

Note: SerVision cannot provide support for problems related to the Clickatell service. For technical support, please contact Clickatell.

6. If you want to send e-mail notifications, under **E-mail Connection Information**, fill in the fields as follows:

Field	Description
Use	**MVG and UVG:** Select the network connection to use to connect to the e-mail server: • **Any:** The unit can use any available network connection; it will connect using the highest priority connection available (as defined under **Network Priorities**; see *Network Priorities*, page 51). • **LAN:** The unit will only use a LAN connection. If none is available, the unit will not connect to the e-mail server. • **WiFi:** The unit will only use a WiFi connection. If none is available, the unit will not connect to the e-mail server. • **Modem:** The unit will only use a Modem connection. If none is available, the unit will not connect to the e-mail server. **HVG, CVG, CVG-M:** Not currently in use.
SMTP Server	Fill in the SMTP server of your e-mail account as they appear in your e-mail software configuration.
SMTP Authentication	If the SMTP server requires authentication, select **Enabled**. The **Username** and **Password** fields are added to the screen.

Field	Description
Username	Fill in the username of your e-mail account as it appears in your e-mail software configuration. **Note:** This field only appears if SMTP Authentication is enabled.
Password	Fill in the password of your e-mail account as it appears in your e-mail software configuration. **Note:** This field only appears if SMTP Authentication is enabled.

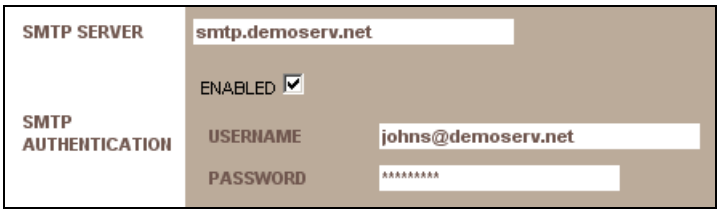


Figure 68: SMTP server and authentication settings

Note: Internet mail accounts (e.g., Yahoo or MSN) are not supported. A list of free SMTP servers can be found at http://www.e-eeasy.com/SMTPServerList.aspx.

7. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

SMS Message Templates

The following codes can be included in SMS message templates:

Code	Description	Example
&S	The name of the sensor or VMD that triggered the event	Front Door
&U	The name of the Video Gateway unit	Bus-5478
&T	The time of the event	22 Feb 07 00:17:16

The default message template is:

```
&S activated on &U at &T
```

If the *Front Door* sensor is triggered, John will receive the following SMS message from the Video Gateway:

```
Sensor (Front Door) ON activated on Bus-5478 at 22 Feb 07 00:17:16
```

The recipient name is set in each message to match the name of the recipient as it appears in the **Recipient** list below the message template.

You can modify the default message to suit your requirements. For example, you could enter the following message:

```
An event was detected: &S at &T
```

In this case, when the *Front Door* sensor is triggered, all the SMS recipients in the list will receive the following message from the Video Gateway:

```
An event was detected: Sensor (Front Door) ON at 22 Feb 07 00:17:16
```

Testing Notification Settings

Once the event notification settings are configured, and the settings have been implemented on the unit (i.e., the settings were saved and the unit was reset), you can test the SMS and e-mail settings to ensure that the notifications are sent to the recipients you intended.

To send a test message to the notification recipients:

- In the **System Summary** screen, under **SMS & E-mail**, click the **Test E-mail** button or the **Test SMS** button. A sample message is sent to all of the recipients of the specified type of notification.

  Note: If no recipients are defined for one of the types of notifications, the test button for that type of notification does not appear.

  Note: Test messages are sent based on the notification configuration settings that are currently defined on the Video Gateway unit. If you make changes to the configuration, but have not yet saved them on the unit and reset the unit, they will not be reflected in the test notifications that are sent.

Automatically Uploading Video to an AVV Server

You can configure the system to automatically upload recorded video of events from the Video Gateway unit to an AVV web server. Once the video has been uploaded, you can access the server via the internet to view the video. This feature is called *Alarm Video Verification* (AVV).

If e-mail connection information is configured (see *SMS and E-mail Notifications*, page 58), e-mail notifications are sent to the specified recipients both when the system begins uploading video to the AVV server and when the system successfully completes the upload. The initial e-mail notification includes a picture of the first recorded frame of the event and a link to the relevant video on the AVV server. The second e-mail is a text message that also includes a link to the video on the AVV server. To access the video, you need only click the link in one of the e-mails. You can also access the video on the AVV server by navigating to the download site.

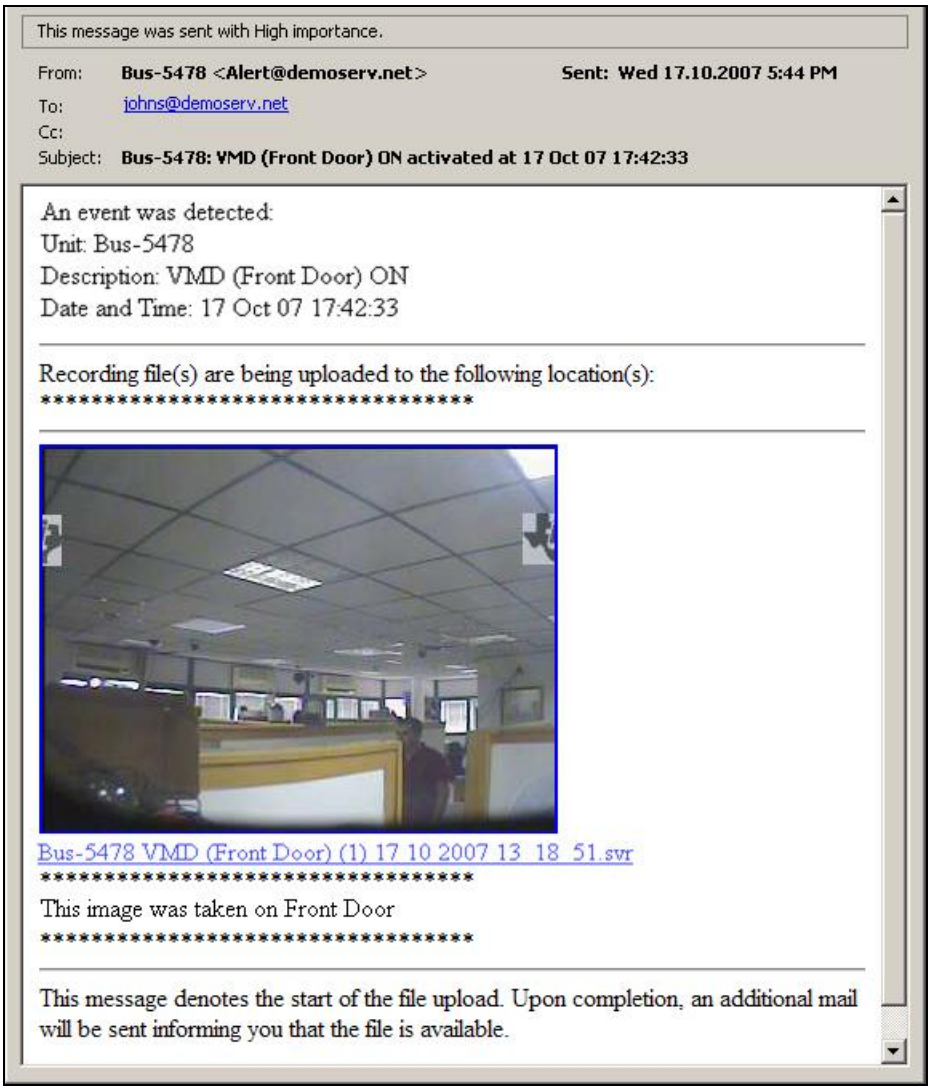

This message was sent with High importance.
From: Bus-5478 <Alert@demoserv.net> Sent: Wed 17.10.2007 5:44 PM
To: johns@demoserv.net
Cc:
Subject: Bus-5478: VMD (Front Door) ON activated at 17 Oct 07 17:42:33
An event was detected:
Unit: Bus-5478
Description: VMD (Front Door) ON
Date and Time: 17 Oct 07 17:42:33
Recording file(s) are being uploaded to the following location(s):
****
Bus-5478 VMD (Front Door) (1) 17 10 2007 13_18_51.svr
****
This image was taken on Front Door
****
This message denotes the start of the file upload. Upon completion, an additional mail will be sent informing you that the file is available.

Figure 69: AVV notification e-mail – start of upload

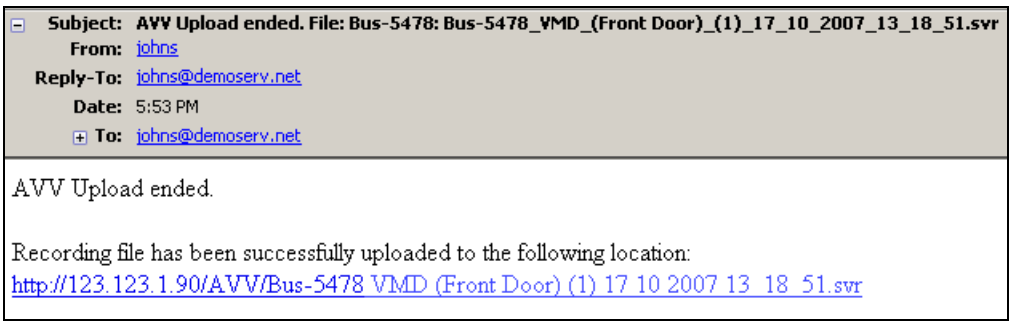

Subject: AVV Upload ended. File: Bus-5478: Bus-5478_VMD_(Front Door)_(1)_17_10_2007_13_18_51.svr
From: johns
Reply-To: johns@demoserv.net
Date: 5:53 PM
To: johns@demoserv.net
AVV Upload ended.
Recording file has been successfully uploaded to the following location:
http://123.123.1.90/AVV/Bus-5478 VMD (Front Door) (1) 17 10 2007 13_18_51.svr

Figure 70: AVV notification e-mail – upload completed

On the MVG and UVG, video files are sent by the Video Gateway using the highest-priority network connection available. (For information about prioritizing network connections, see *Network Priorities*, page 51.)

This section explains how to configure the settings that make it possible for the system to upload video to an AVV server. Video is only actually uploaded if AVV is activated in the configuration of the device triggering an event – a camera, sensor, or activator. For information on configuring a device to trigger automatic uploading of events to an AVV server, see the sections about configuring that type of device:

- *Video Motion Detection (VMD)*, page 88

- *Configuring Video Lost*, page 94
- *Configuring Sensor and Activator* Settings, page 110

NOTE: A list of devices that are configured to trigger AVV is displayed at the top of the AVV screen (see figure 74, page 68).

To configure the settings of the AVV server:

1. In the **Main Menu**, under **System**, click **AVV**. The **Alarm Video Verifications** screen opens:

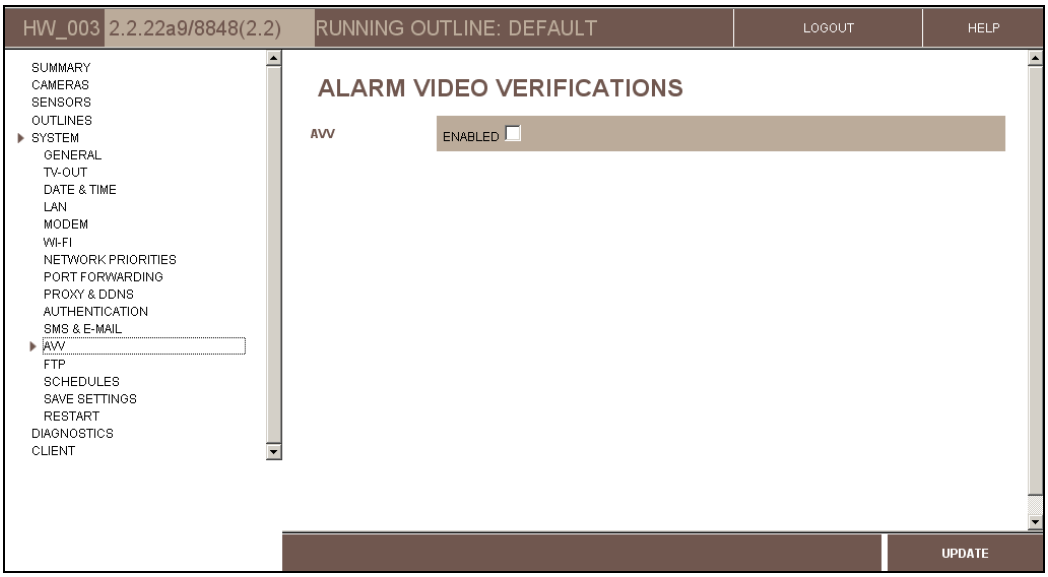


Figure 71: Alarm Video Verifications screen

2. Under **AVV**, select **Enabled**. The fields required to configure the AVV settings are added to the screen.

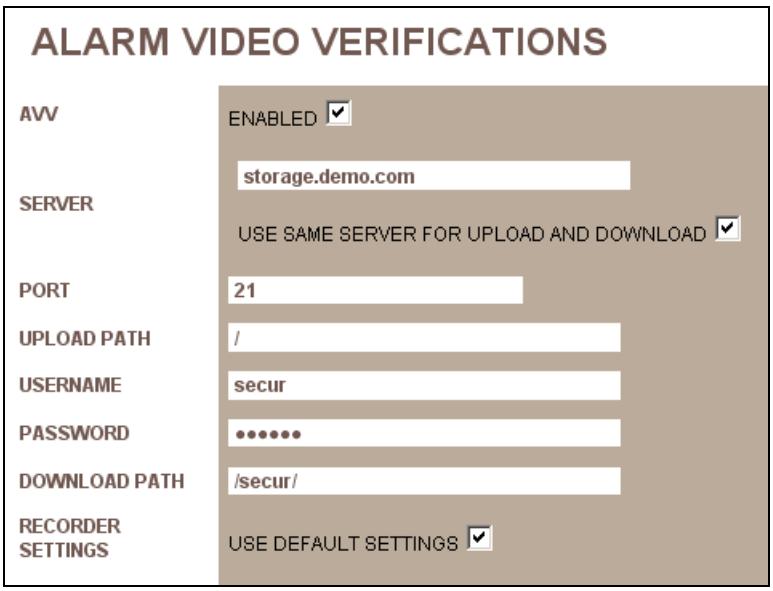


Figure 72: AVV screen expanded

3. Fill in the fields as follows:

Field	Description
Server	Fill in the IP address or hostname of the AVV upload server.
Use Same Server for Upload and Download	If the URL for uploading and downloading is the same, select this checkbox. Otherwise, clear this checkbox. The **Download Server** field is added to the screen.
Download Server	Fill in the IP address or hostname of the AVV download server. The URL must include the network protocol (e.g., *http* or *ftp*). **Note:** This field only appears if the **Use Same Server for Upload and Download** is selected.
Port	Fill in the port used for FTP connections to the AVV server (usually 21).
Upload Path	Fill in the path of the FTP directory on the AVV server. The Video Gateway will upload the video files to this directory.
Username	Fill in the username required to access the FTP directory on the AVV server.
Password	Fill in the password required to access the FTP directory on the AVV server.
Download Path	Fill in the path of the HTTP directory on the AVV server. You will download the video files to your PC from this directory.

4. Under **Recorder Settings**, do one of the following:

   - If you want to use the same recorder quality settings for the downloaded video as those used for recorded video that is stored on the Video Gateway, select **Use Default Settings**. Then skip to step 6.
   - If you want to select different recorder quality settings, clear the **Use Default Settings** checkbox. The fields required to configure the recorder settings are added to the screen.

Figure 73: AVV custom recorder settings

Note: Default recorder settings are set in the **Camera** screen. For additional information, see *Video Recording Settings*, page 96; *Advanced Recorder Settings*, page 97.

5. Fill in the fields as follows:

Field	Description
Maximum Size	Select the desired frame size for the downloaded video. If the unit is configured to use VGA video resolution, you can choose on of the following: • **QSIF:** Small frame (160x120 pixels) • **SIF:** Medium-sized frame (320x240 pixels) • **VGA:** Large frame (640x480 pixels) If the unit uses D1 video resolution, you can choose one of the following: • **QCIF:** Small frame (176x120 pixels for NTSC systems and 176x144 for PAL systems) • **CIF:** Medium-sized frame (352x240 pixels for NTSC systems and 352x288 pixels for PAL systems)

Field	Description
	• **D1:** Large frame (704×480 pixels for NTSC systems and 704x576 pixels for PAL systems) **Note:** Large frame (VGA or D1) is available only if large-frame recording is activated for one or more of the cameras connected to the Video Gateway. (See *Advanced Recorder Settings*, page 97.) For additional information about video resolutions, see *Video Resolution*, page 19. **Note:** If you select a frame size that is larger than the frame size of the default recording setting of a camera, the default setting is used and the value you specify is not implemented. For example, if VGA is selected here, and recording for the camera is in SIF, the uploaded video will be in SIF. **Note:** This setting only affects the resolution of the video uploaded to the AVV server; it does not affect the size of the image attached to the e-mail notification.
FPS	Fill in the required framerate for the recordings, in frames per second. **Note:** If you specify an FPS value that is larger than the FPS value of the default recording setting of a camera, the default setting is used and the value you specify is not implemented.
KBPS	Fill in the required bitrate for the recordings, in kilobits per second. **Note:** If you specify a KBPS value that is larger than the KBPS value of the default recording setting of a camera, all of the default quality settings are used and the values you specify for maximum size, FPS, and KBPS are not implemented.

6. Click **Update**, and then save the settings. The AVV option is added to the camera, sensor, and activator screens. The changes will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

   Note: You can now configure devices to act as triggers for AVV. A list of devices that are configured to trigger AVV is displayed at the top of the AVV screen.

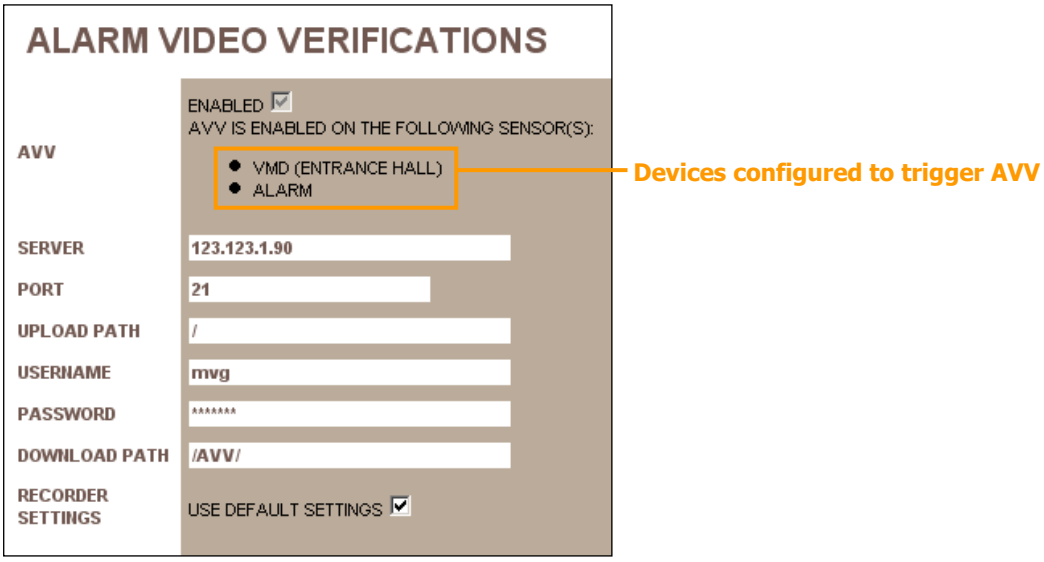


Figure 74: List of devices configured to trigger AVV

Viewing the List of Files on the AVV Server

You can view a list of the files on the AVV server by navigating to the http directory on the server. The name of each file indicates the device that detected the event, and the date and start-time of the event. For example: `Office_Security_VMD_(Back_Door)(2)_09_07_2007_20_43_51.svr`

➪ *To view a list of the video files on the AVV server:*

1. In the **Address** field of a browser, fill in the download address of the video. For example, if your AVV server name is `storage.servdemo.net`, and the download path is `/demo`, enter `http://storage.servdemo.net/demo/`

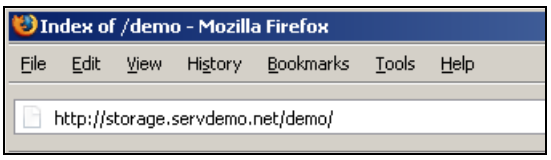


Figure 75: Address of download site

2. Press **Enter**. If the download directory requires authentication, a dialog box opens, requesting the username and password.

3. Fill in the username and password, as required, and then click **OK**. A list of the files stored in the download directory appears in the browser window.

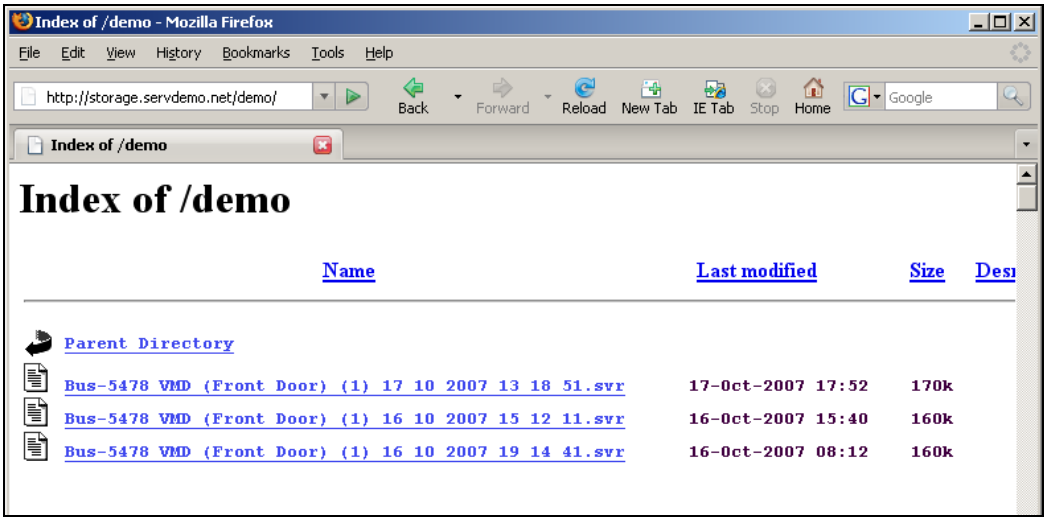

Index of /demo - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://storage.servdemo.net/demo/
Back Forward Reload New Tab IE Tab Stop Home Google
Index of /demo
Index of /demo
Name Last modified Size Desi
Parent Directory
Bus-5478 VMD (Front Door) (1) 17 10 2007 13 18 51.svr 17-Oct-2007 17:52 170k
Bus-5478 VMD (Front Door) (1) 16 10 2007 15 12 11.svr 16-Oct-2007 15:40 160k
Bus-5478 VMD (Front Door) (1) 16 10 2007 19 14 41.svr 16-Oct-2007 08:12 160k

Figure 76: List of files in the download directory

Viewing Video from the AVV server

To view the video that is stored on the AVV server, you download the video to a PC and then play it in the MultiClient.

➪ *To download and view a video file from the AVV server:*

1. If you received an e-mail notification of the event, click either the image or the link in the e-mail.

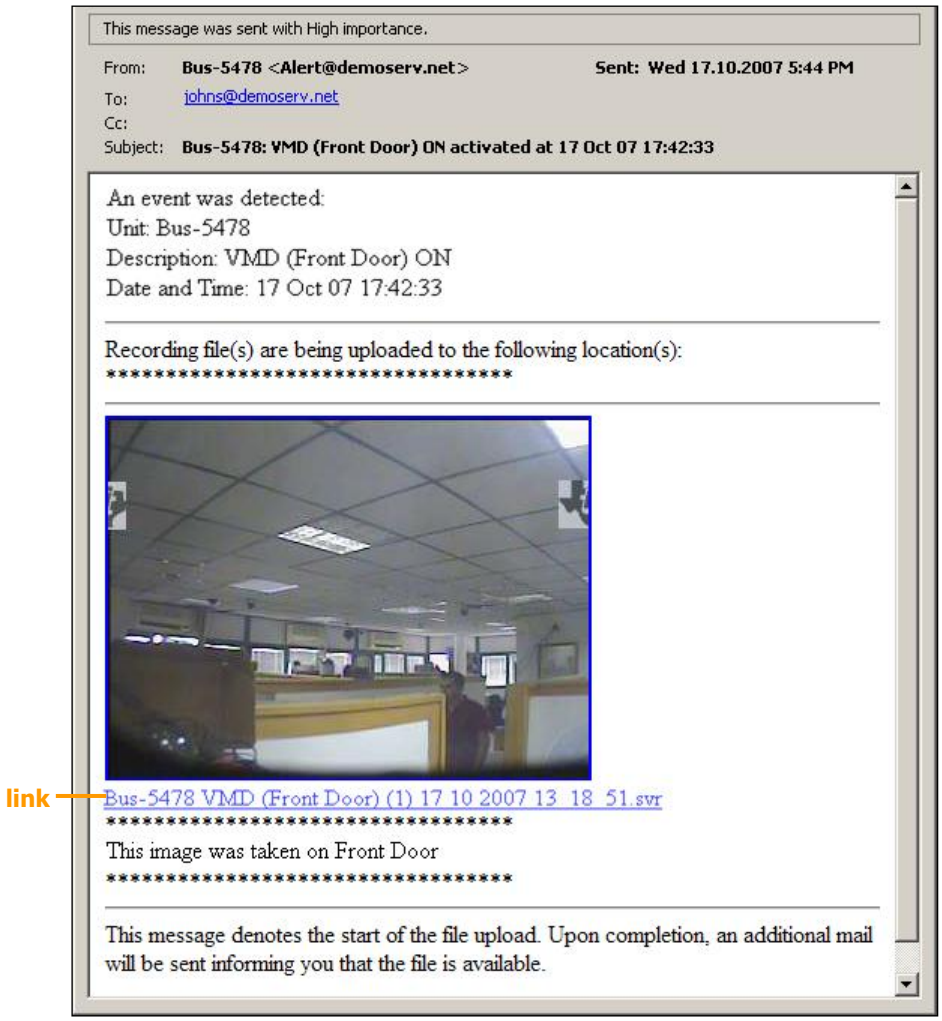
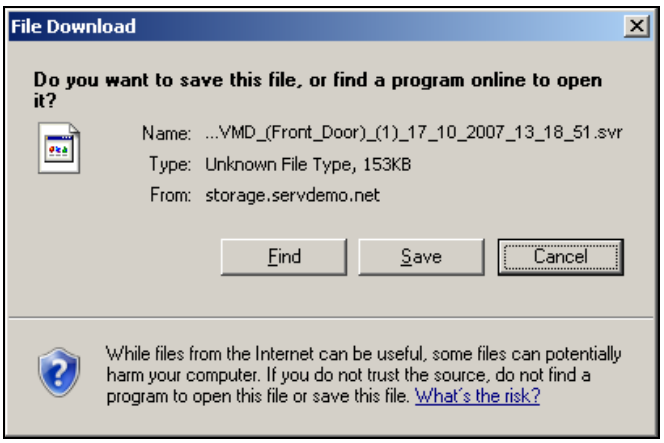

This message was sent with High importance.
From: Bus-5478 <Alert@demoserv.net> Sent: Wed 17.10.2007 5:44 PM
To: johns@demoserv.net
Cc:
Subject: Bus-5478: VMD (Front Door) ON activated at 17 Oct 07 17:42:33
An event was detected:
Unit: Bus-5478
Description: VMD (Front Door) ON
Date and Time: 17 Oct 07 17:42:33
Recording file(s) are being uploaded to the following location(s):
****
link
Bus-5478 VMD (Front Door) (1) 17 10 2007 13_18_51.svr
****
This image was taken on Front Door
****
This message denotes the start of the file upload. Upon completion, an additional mail will be sent informing you that the file is available.

Figure 77: E-mail notification with video link

Otherwise, navigate to the download site though the browser as described above, and click the required file in the list.

If the site requires authentication, a dialog box opens, requesting the username and password.

2. Fill in the username and password, as required, and then click **OK**. A dialog box opens, and asks what to do with the video file.


File Download
Do you want to save this file, or find a program online to open it?
Name: ...VMD_(Front_Door)_(1)_17_10_2007_13_18_51.svr
Type: Unknown File Type, 153KB
From: storage.servdemo.net
Find
Save
Cancel
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not find a program to open this file or save this file. What's the risk?

3. Select **Save**. A file selector dialog box opens.

4. Navigate to the location on your PC in which you want to save the video clip file, and then click **Save**. The file is saved in the selected location.
5. Open the MultiClient.
6. Play the video clip file in the MultiClient in one of the following ways:
   - Drag the downloaded file to a camera pane in the MultiClient.
   - In the **Tools** menu, select **Play Downloaded Video**. Navigate to the file, select it, and then click in a camera pane.

   The video clip is played in the camera pane.

   Note: For additional information about playing video files in the MultiClient, please refer to the relevant user guide.

Disabling AVV

Once AVV uploading has been enabled, you can disable it as follows:

➪ *To disable AVV uploading:*

1. Ensure AVV is disabled for all cameras and sensors connected to the Video Gateway unit.

   Note: To do this, in the **AVV** screen, check the list of devices for which AVV is activated. The list appears below the **Enabled** field if AVV is activated for any devices (see figure 74). For each device in the list, disable AVV in the configuration screen of the device. (For information about how to do this, see the following: on VMD settings, see page 88; on video lost settings, see page 94; on sensor and activator settings, see page 110.)
2. In the **Main Menu**, under **System**, click **AVV**. The **Alarm Video Verifications** screen opens.
3. Under **AVV**, clear the **Enabled** checkbox. The fields used to configure the AVV settings are removed from the screen.

   Note: This checkbox is disabled if AVV is enabled in any VMD or video lost settings, or in the settings of any sensor or activator.
4. Click **Update**, and then save the settings. The AVV option is removed from the camera, sensor, and activator screens. The changes will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

FTP Server Settings

You can specify an FTP server to which video can be downloaded manually. If you do so, you can select events for download in the **Events** screen (see *Viewing and Downloading Events*, page 135), and the video of the events is downloaded to this server. In addition, if your system has a CCTV monitor, you can also download video to this server using the monitor (see *Editing and Downloading Video Excerpts*, page 180).

➪ *To configure the settings of the FTP server:*

1. In the **Main Menu**, under **System**, click **FTP**. The **FTP Download** configuration screen opens:

Figure 78: FTP Download configuration screen

2. Select the **Enabled** checkbox. The fields required to configure the FTP server settings are added to the screen.

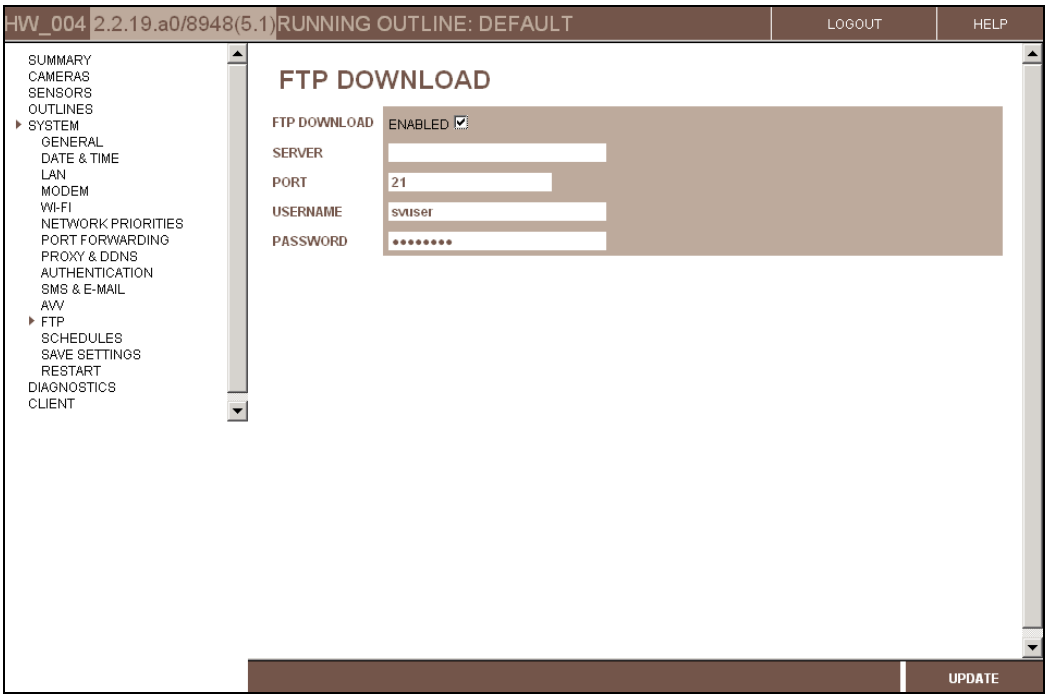


Figure 79: FTP Download enabled

3. Fill in the fields as follows:

Field	Description
Server	Fill in the IP address or hostname of the FTP server.
Port	Fill in the port used for FTP connections to the FTP server (usually 21).

Field	Description
Username	Fill in the username required to access the FTP directory on the FTP server.
Password	Fill in the password required to access the FTP directory on the FTP server.

4. Click **Update**, and then save the settings. The changes will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Schedules

Schedules allow you to configure the unit to automatically switch the running outline at specified times. You can set up standard repeating schedules for routine time periods, such as regular work weeks or the summer months. You can also define special schedules for holidays, both repeating holidays (e.g., New Years Day) and non-repeating holidays (e.g., a presidential visit or the opening ceremony of the Olympics).

The schedule is only implemented by the system if the following conditions are met:

- Multiple outlines are defined for the system (see *Defining Alternate Outlines*, page 118)
- Schedule-triggered outline-switching is activated in the **General System Settings** screen (see *General System Settings*, page 19)

To configure the schedule:

1. In the **Main Menu**, under **System**, click **Schedules**. The **Schedules** screen opens. If schedule-triggered outline switching is not activated in the **General System Settings** screen, *Inactive* appears in parentheses after the name of the screen. In this case, you can configure the schedule, but it will not be implemented unless you activate schedule-triggered outline switching.

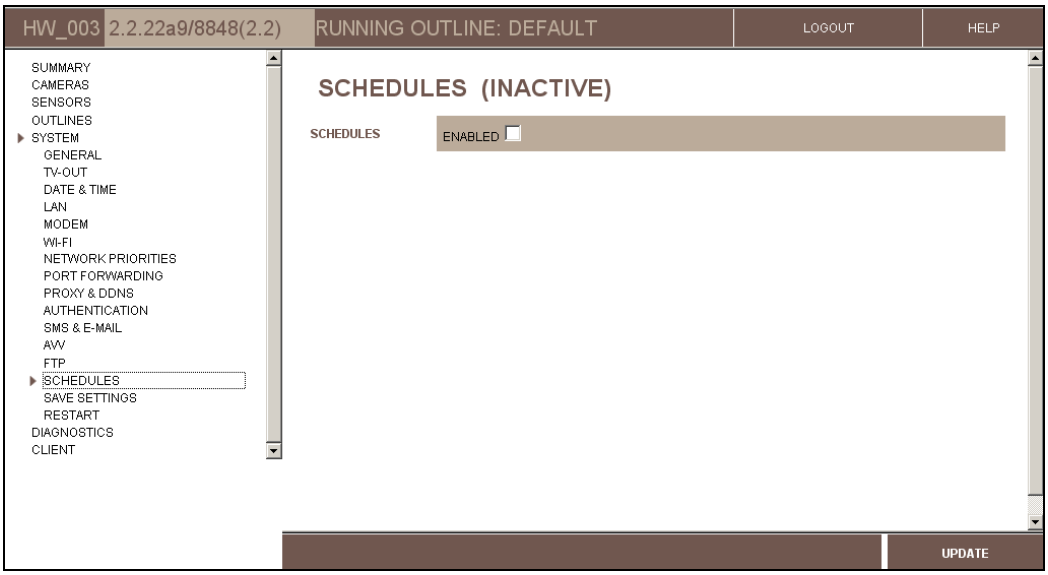


Figure 80: Schedules screen (inactive)

2. Select **Enabled**. The schedule grid and its controls are displayed.

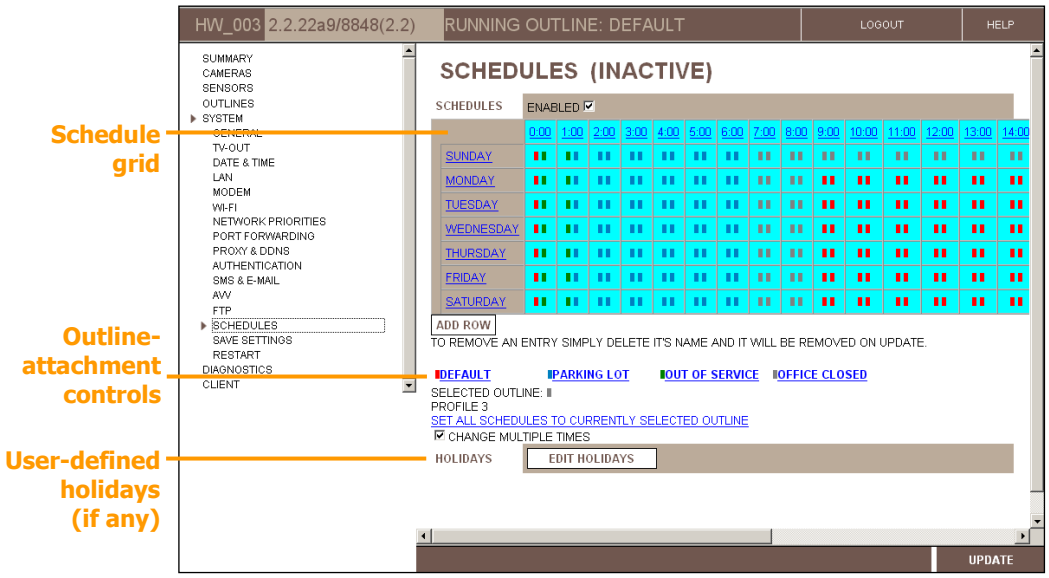


Figure 81: Schedules enabled

The upper part of the screen contains the schedule grid. Below it are controls that allow you to attach specific outlines to particular days and times in the grid. Below these, user-defined holidays appear, if any are defined.

Initially, the schedule grid contains a row for each day of the week and a column for each hour of the day. This grid defines the routine schedule for regular work weeks. Each cell in the grid contains two colored rectangles (see figure 82 below). Each of these rectangles represents a half hour – half of the time represented by the entire cell. The color of the rectangle indicates which outline it represents.

The key to the color-coding of the outlines appears below the grid. For example, in figure 82 below, the *Default* outline is represented in the grid by a red rectangle, the *Parking Lot* outline by a blue rectangle, the *Out of Service* outline by a green rectangle, and the *Office Closed* outline by a gray rectangle. Thus, the top-left cell in the grid says that the *Default* outline should run from midnight to 12:30 am, and the *Out-of-Service* outline should run from 12:30 am to 1:00 am.

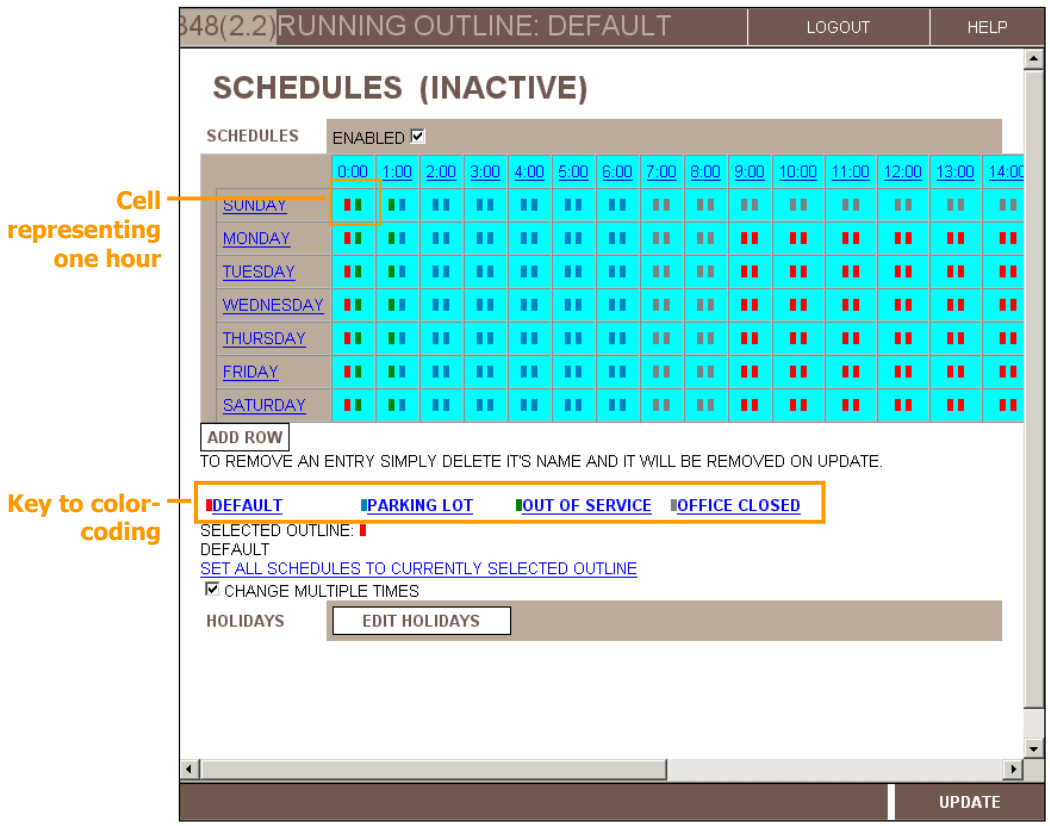


Figure 82: Color-coded schedule

3. Follow the instructions below to create a basic, repeating weekly schedule and to add holidays to the schedule.

Configuring a Standard Weekly Schedule

This section explains how to set up a basic, repeating weekly schedule of outline implementation.

➪ *To define the basic weekly schedule:*

1. In the color-coding key, click the name of the outline you want to assign to one or more time slots in the schedule grid. A colored rectangle representing the selected outline is displayed below the key area, under **Selected Outline**, and the name of the outline is displayed below this. For example, in the figure below, the selected outline is *Default*, represented by the red rectangle.

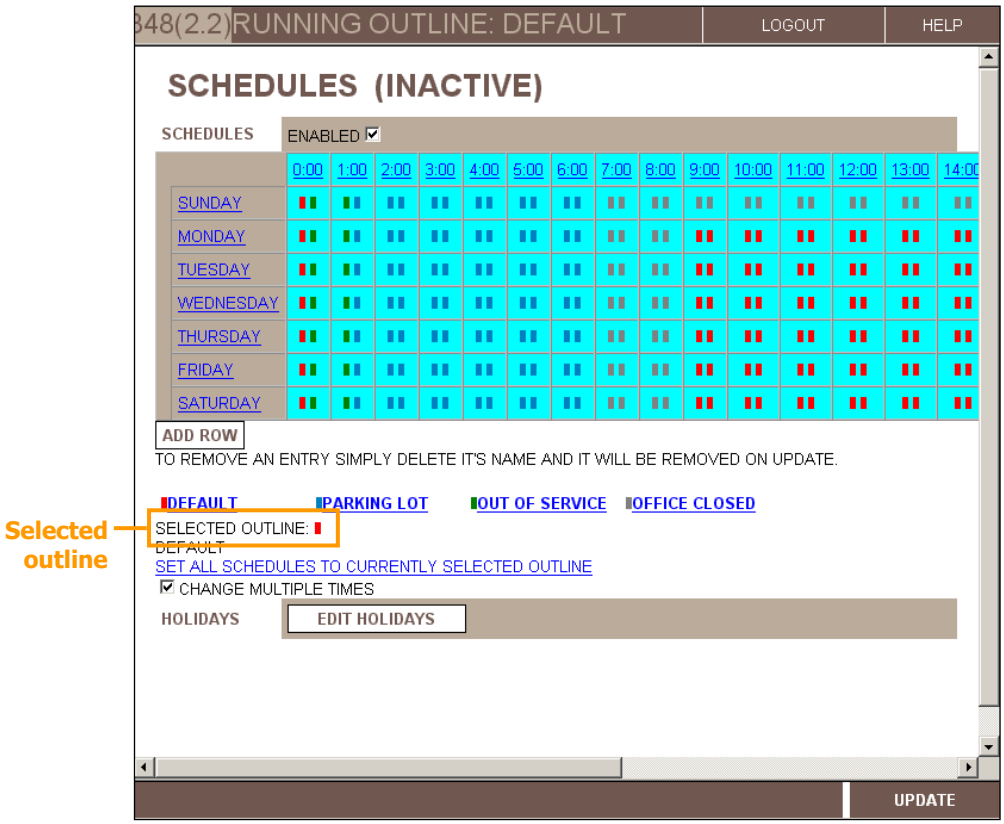


Figure 83: Color-coded schedule

2. If you want to apply the outline to the entire week's schedule, click **Set all schedules to currently selected outline**. All of the rectangles in the schedule grid are switched to the color representing the selected outline.

3. If you want to apply the outline to specific day of the week, click the name of the day in the schedule grid. All of the rectangles in the row are switched to the color representing the selected outline.

4. If you want to apply the selected outline to a rectangular area of the schedule grid (containing multiple rectangles), do the following:

   - Make sure the **Change Multiple Times** checkbox is *selected*.
   - Click one corner of the rectangular area. A border appears around the rectangle.

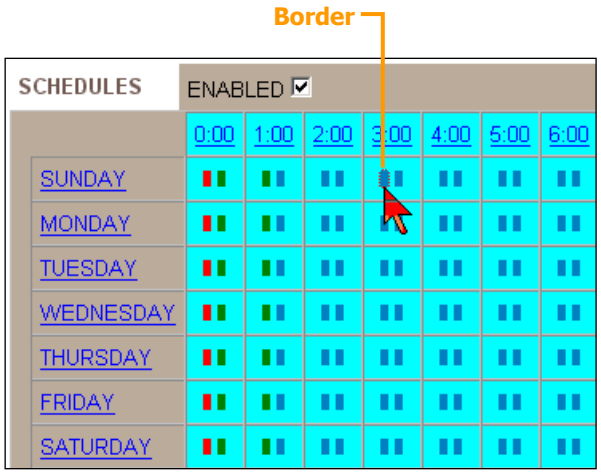


Figure 84: Rectangle with border

- Click the diagonally opposite corner of the rectangular area that you want to mark. The selected outline is applied to the entire rectangle.

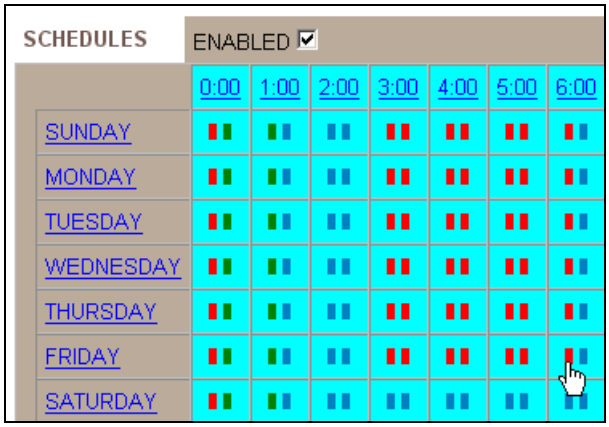


Figure 85: Clicking the diagonally opposite corner of the area

Note: The entire schedule grid, representing full 24-hour days, may not be visible at one time on your screen. Use the horizontal scrollbar at the bottom of the screen to move the display to the right or left so that you can see the relevant times of day.

5. If you want to apply the selected outline to individual half-hour time slots, do one of the following:

   - With the **Change Multiple Times** checkbox *selected*, double-click the rectangle representing the time slot.
   - With the **Change Multiple Times** checkbox *cleared*, click the rectangle representing the time slot.

   The rectangle is displayed in the color representing the selected outline.

6. Repeat steps 1–5 as necessary for each type of outline you want to apply to a time slot in the schedule.
7. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Defining Holiday Schedules

Holiday schedules are essentially exceptions to the standard weekly schedule. When you define a holiday, you can choose to apply an existing day's schedule to it. For example, you can apply the Sunday schedule to Independence Day. Alternatively, you can create a new day's schedule and apply the new schedule to one or more holidays. To do this, you add a row to the schedule grid. For example, you could add a row called Business Holiday, define a schedule for it, and then create a holiday called Independence Day to which you apply the Business Holiday schedule (see *Defining a New Schedule Row*, page 80).

Holiday schedules can overlap. For example, if you create a holiday schedule for the first week of July, and another holiday schedule for July 4th, the two schedules both apply to July 4th. In this case, the system creates a hierarchy of schedules:

- Shorter time periods are given precedence over longer time periods.
- Non-repeating schedules are given precedence over repeating schedules.
- Repeating holiday schedules are given precedence over the standard weekly schedule.

Thus, in the example above, the July 4th will schedule will be implemented on July 4th, and the schedule for the first week of July will be implemented on the other days of the week.

➪ *To define a holiday:*

1. In the **Schedules** screen, in the **Holidays** section, click **Edit Holidays**.

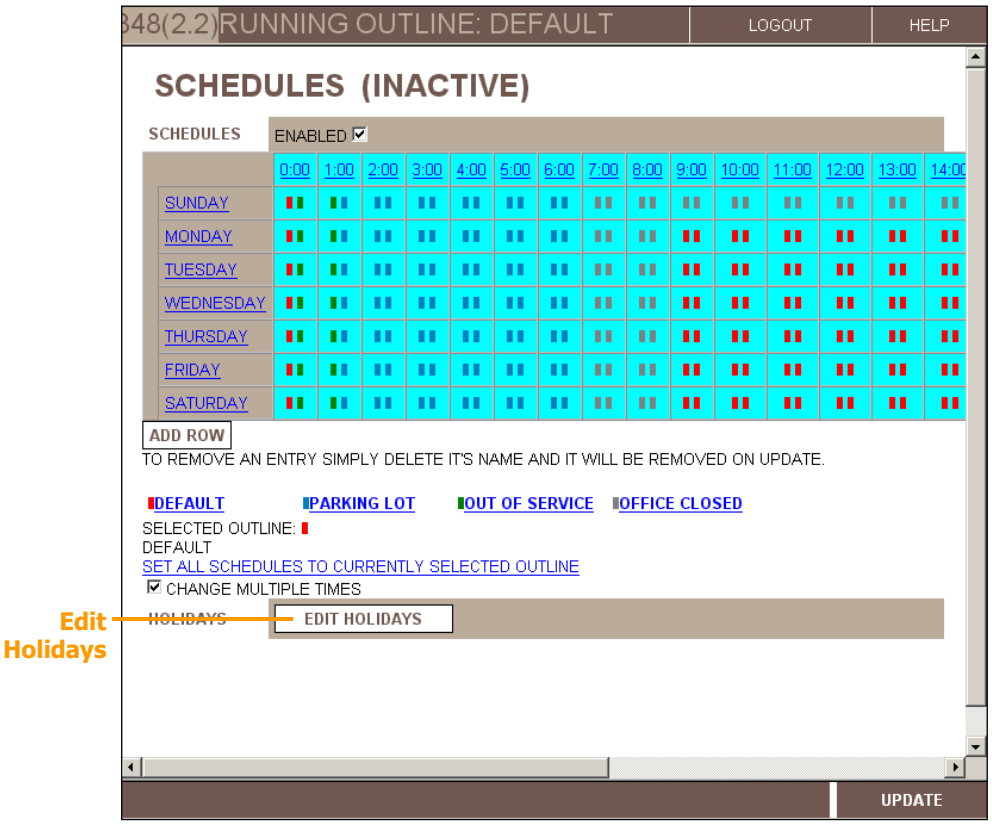


Figure 86: Edit Holidays

The **Holidays** screen opens. The screen displays the schedule grid at the top (it is not editable here), and below it, a list of the holidays that are already defined (if any).

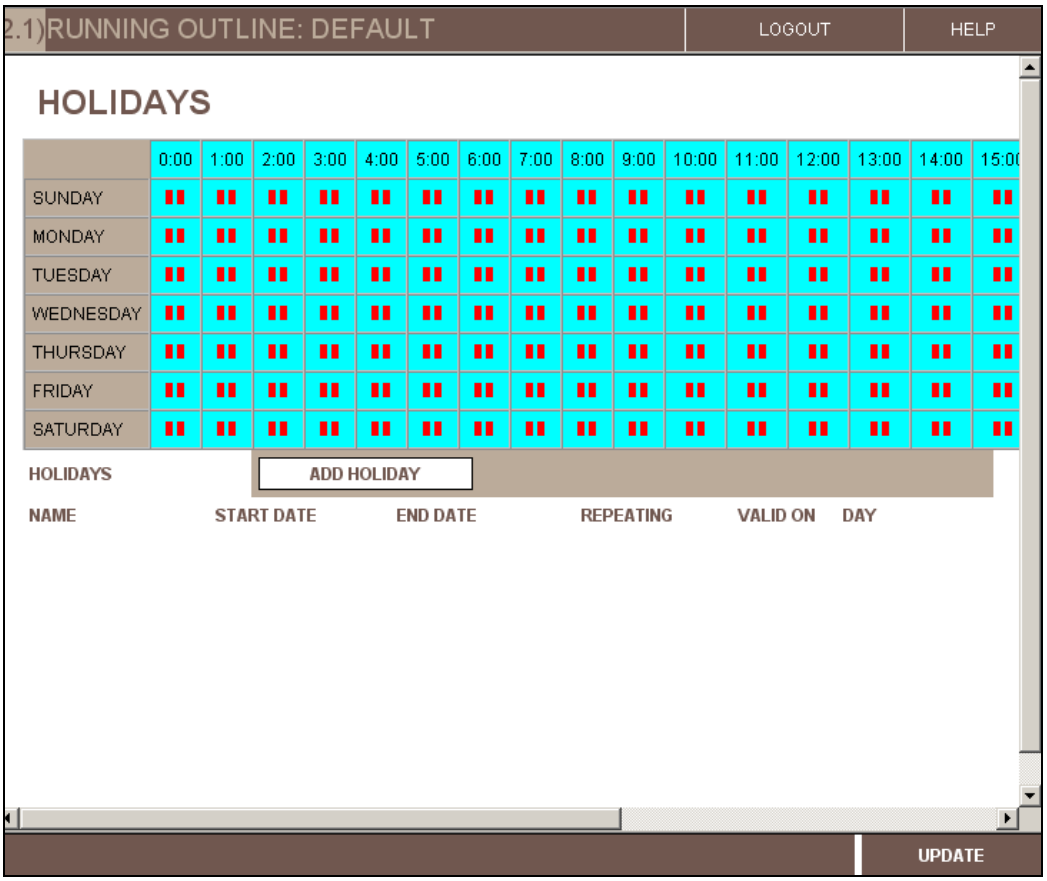


Figure 87: Holidays screen

2. Click **Add Holiday**. A blank **New Holiday** section opens.

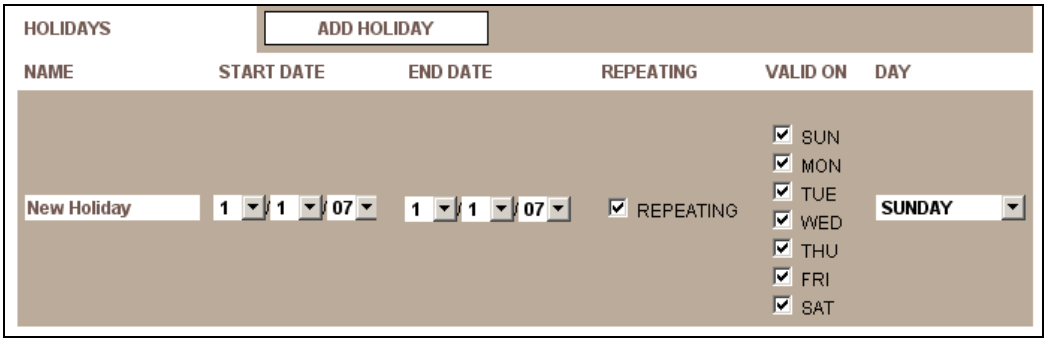


Figure 88: New Holiday section

3. Fill in the fields as follows:

Field	Description
Name	The name of the holiday, e.g., *New Years Day*.
Start Date	The date of the first day of the holiday.
End Date	The date of the last day of the holiday. If the holiday only lasts one day, this is the same as the start date.

Field	Description
Repeating	If the holiday occurs every year on the same date(s), select this checkbox. If the holiday occurs on different dates every year, or is only taking place once, clear this checkbox.
Valid On	The days of the week on which the holiday schedule is applicable. For example, if a Jazz festival is scheduled for all of the Sundays in July, you could select Sunday. The holiday schedule would be implemented only on the Sundays of the month of July.
Day	Select the name of the row in the schedule grid to implement on the holiday. For example, in the Jazz festival scenario, if you select Saturday, the Saturday schedule would be applied on all of the Sundays in July. **Note:** If none of the existing schedules in the grid are appropriate for the holiday, you can create a new row in the grid, as explained below. (The new row must be added in the **Schedules** screen before it can be selected in the **Holidays** screen; once it is added, you can select it in the **Holidays** screen in this dropdown list.)

4. Click **Update**. The holiday schedule is updated. It will be implemented after you save the changes and restart the system.

5. In the **Main Menu**, click **Schedules**. The **Schedules** screen opens. The holiday you defined appears in the list of holidays at the bottom of the screen.

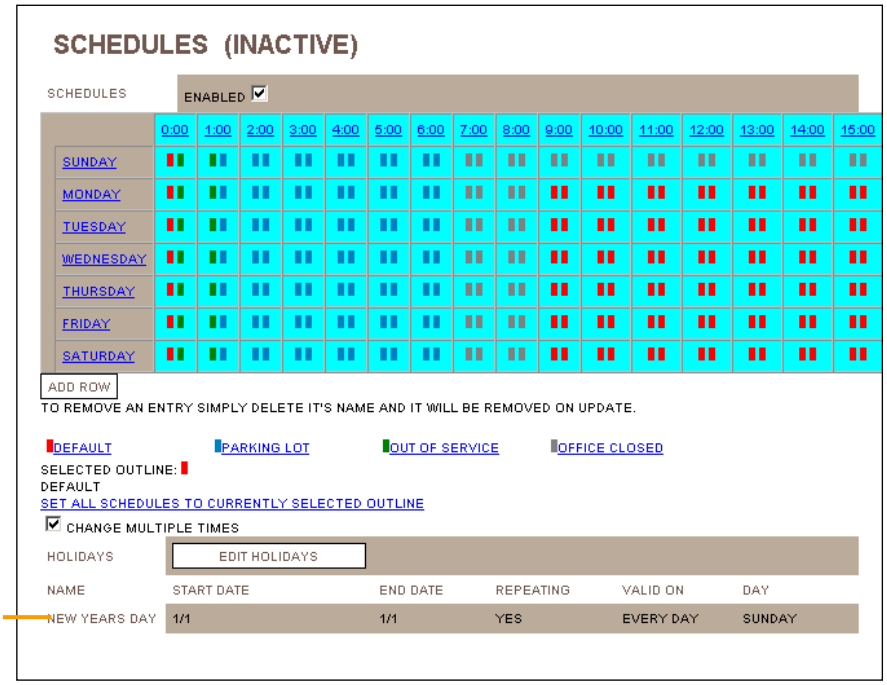


Figure 89: Holiday added to the schedule

Defining a New Schedule Row

In addition to the standard rows for the days of the week, you can create custom schedule rows that can be implemented on holidays. For example, you could create a special row with a schedule that is to be applied only on New Years Day.

➪ *To define a new schedule (row):*

1. In the **Schedules** screen, below the schedule grid, click **Add Row**. A new row is added to the grid.

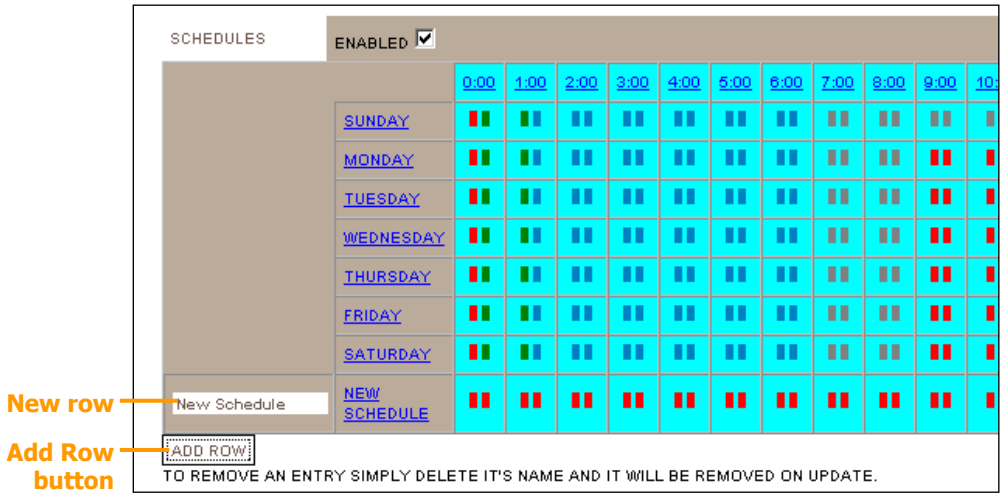


Figure 90: New row in schedule grid

2. In the text field, modify "New Schedule" to define a name for the schedule.

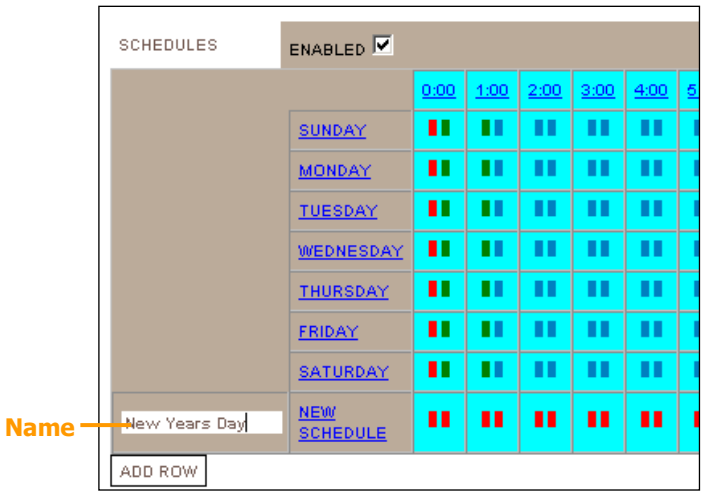


Figure 91: Naming a new row

3. Click **Update**. The name of the row is updated.

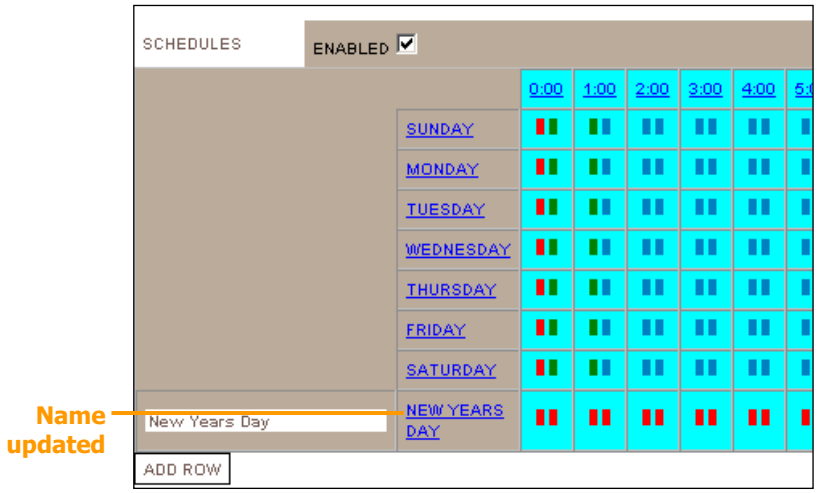


Figure 92: Row name updated

4. Follow the instructions under *Configuring a Standard Weekly Schedule*, page 75 to select the outlines to implement in each time slot.

   Note: To assign the new schedule to a holiday, click **Edit Holidays** to open the **Holidays** screen. Follow the instructions above (see *Defining Holiday Schedules*, page 77) for configuring the holiday. The new schedule appears in the holiday configuration section in the **Day** dropdown list.

Configuring Camera Settings

The **Camera** screens are used to configure the cameras connected to the Video Gateway unit. Settings include the name of the camera; the desired brightness, contrast, and saturation; pan-tilt-zoom (PTZ) settings; audio settings; video-motion-detection (VMD) settings; video-lost settings; and recording settings.

About Brightness and Contrast Settings

Brightness and contrast settings affect the camera and not just the display in the client interface. The settings defined in the **Camera** screens are the default settings for video streams from the specified camera. When the video stream is displayed in the client, these settings can be modified. This makes it possible for you to fine-tune the settings while you are viewing the stream.

Modifications that are implemented in the client affect all live and recorded video from the relevant camera until the Video Gateway unit is reset. To implement them permanently, they must be saved in the unit's configuration. To save settings that are modified in a client application, you must log into the configuration utility and update the settings there, as described below.

NOTE: Changes to brightness and contrast settings affect the camera directly, and are thus reflected in all displays of live video from that camera from the time they are implemented. Similarly, video that is recorded from the camera after the changes are implemented is also affected. The brightness and contrast settings that are optimal for a particular monitor may not display as well on other monitors or screens. Therefore, care should be taken when changes are made, and, furthermore, it may not be advisable to save the modified settings on the unit in every case.

Configuring Video Cameras

The **Camera Summary** screen summarizes the current settings of each camera in the system, and provides links to the camera configuration screens, in which the camera settings can be modified.

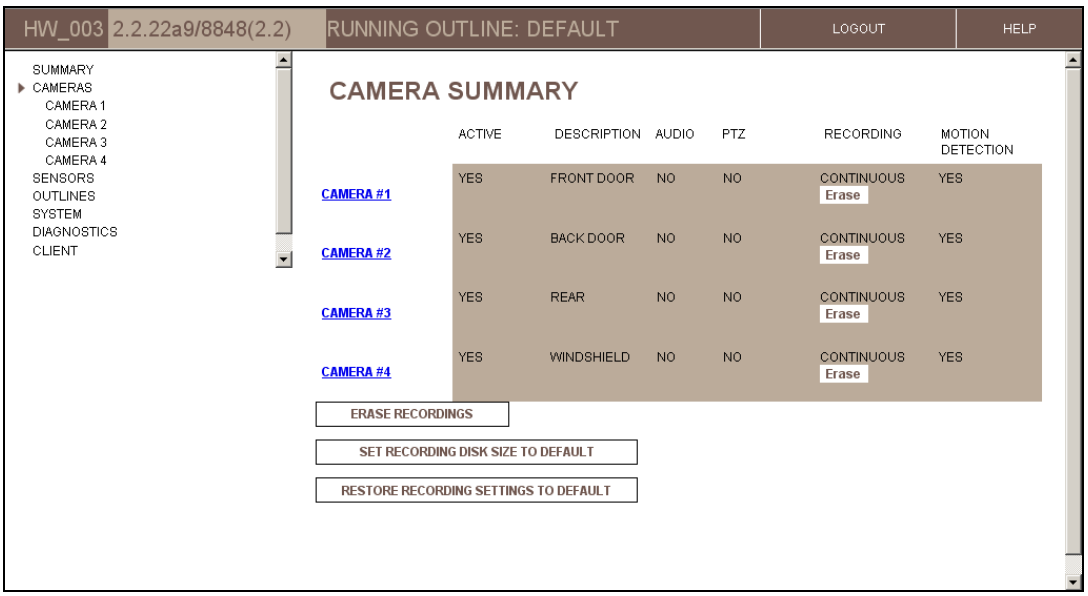


Figure 93: Camera Summary screen

Each camera in the system is configured in its own configuration screen. The camera configuration screens are accessed from the **Camera Summary** screen.

NOTE: For information about the **Erase Recordings** and **Set Recording Disk Size to Default** options, see *Erasing Recorded Video*, page 104. For information about the **Restore Recording Settings to Default** option, see *Restoring Default Recording Settings*, page 101.

To open the Camera Summary screen:

- In the **Main Menu**, click **Cameras**.

To configure a camera:

1. In the **Main Menu**, under **Cameras**, click the camera (e.g., **Camera 1** to configure the camera plugged into **Vin1**). The relevant **Camera** configuration screen opens:

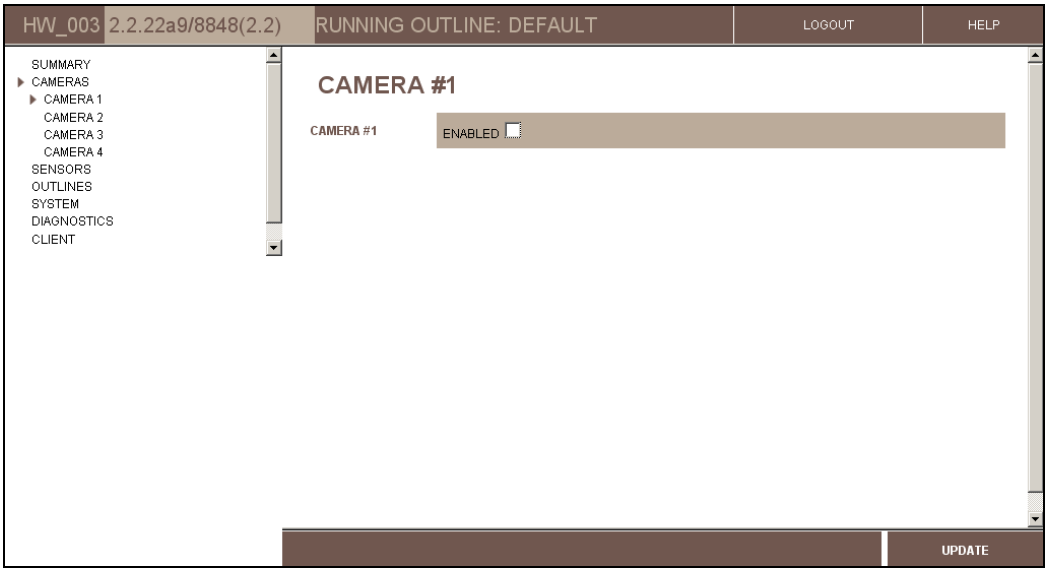


Figure 94: Camera configuration screen

2. Select the **Enabled** checkbox. The fields required to configure the camera settings are added to the screen.

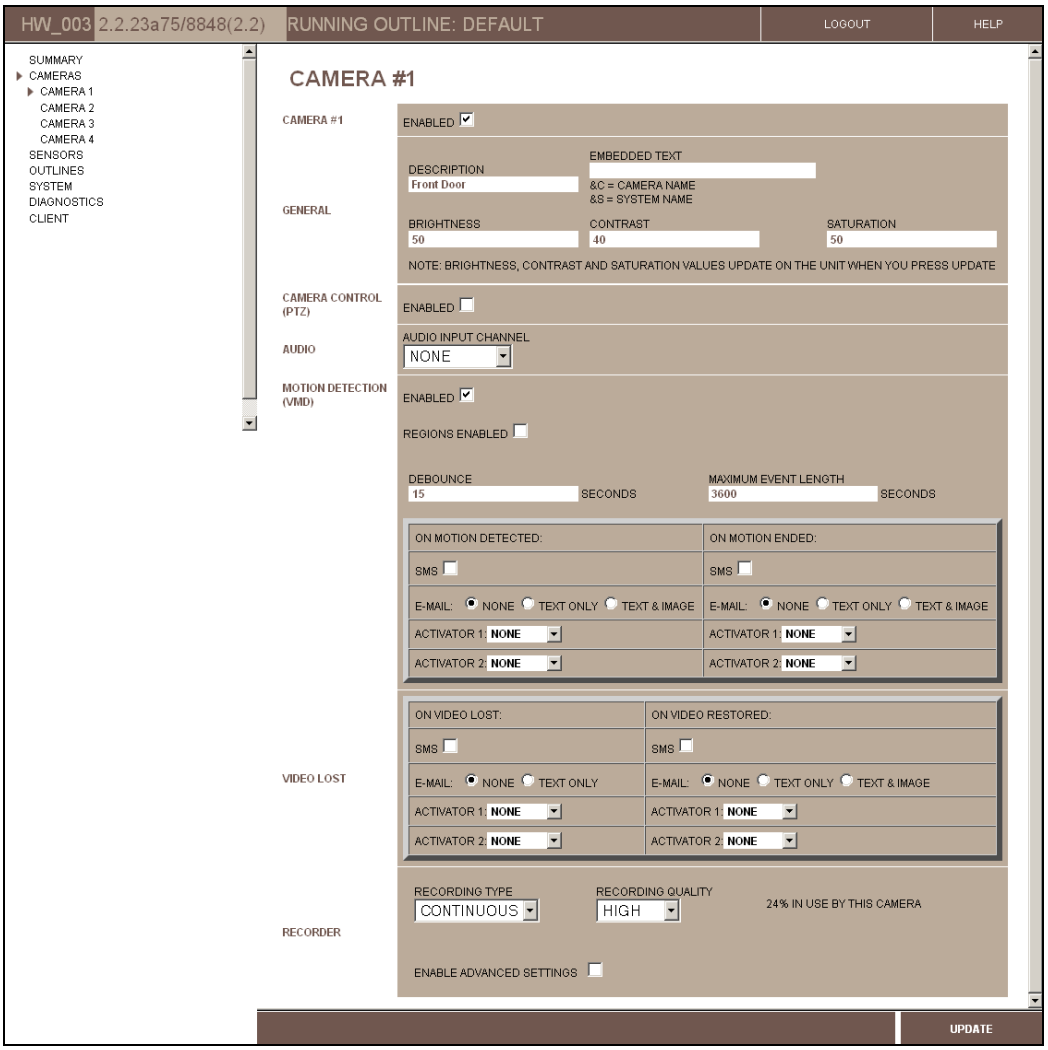


Figure 95: Camera enabled

Note: If **Enabled** is not selected, the camera cannot record and will not appear in client applications.

3. Fill in the fields as follows:

Field	Description
Description	Type a name for the camera (up to 20 characters). Each of the cameras must have a different name. The camera names are used to identify the camera in client applications. **Note:** If the Video Gateway will be working in conjunction with an SVBackup server, use only English characters in the name.
Embedded Text	If you want an identifying label to be included in each frame of video that is displayed in a client application, type the text of the label. You can include the variables **&C** and **&S** in the text where you want to insert the camera name and system name. For example, if the camera name is "Front Door" and the system name is "Bus2045," type "&C camera on &S," and the label embedded in each frame would say "Front Door camera on Bus2045."

Field	Description
Brightness	Adjust the default brightness of the camera. Range: 1–100. These values are used when the Video Gateway unit is started. **Note:** You can also adjust the brightness in the client or in a CCTV monitor (with the touch/mouse enabled) as you view the video stream (see page 83).
Contrast	Adjust the default contrast of the camera. Range: 1–100. These values are used when the Video Gateway unit is started. **Note:** You can also adjust the contrast in the client or in a CCTV monitor (with the touch/mouse enabled) as you view the video stream (see page 83).
Saturation	Adjust the default saturation of the camera. Range: 1–100. Higher saturation produces more vivid colors.

Note: Changes to brightness, contrast, and saturation are implemented immediately when **Update** is clicked.

4. If the camera has PTZ features, and you want to use them to control the camera remotely through a client application, under **Camera Control (PTZ)**, select **Enabled**. Then follow the instructions below (*Configuring PTZ*, page 87).

5. Under **Audio**, select one of the following:

   - **None:** Do not link any audio to the video from this camera.
   - **Channel 1:** Link the audio from the microphone connected to **Ain1** to the video from this camera.
   - **Channel 2:** Link the audio from the microphone connected to **Ain2** to the video from this camera (HVG, MVG, UVG only).

   Note: In HVG units that only support one microphone, you will either see **Channel 1** or **Channel 2** in the dropdown list, depending on which one was activated. For additional information, see the description of the *Input Volume Ch 1 / Input Volume Ch 2* field (page 22).

   If you selected **None**, skip to step 8.

   If you selected either **Channel 1** or **Channel 2**, audio from the selected microphone is available whenever you view *live* video in a client application. In addition, the fields required to configure *recording* of audio with recorded video from this camera are added to the screen, and a message appears indicating that audio recording is enabled. This means that audio from the selected microphone is incorporated with all video recorded from the camera.

Figure 96: Audio recording settings

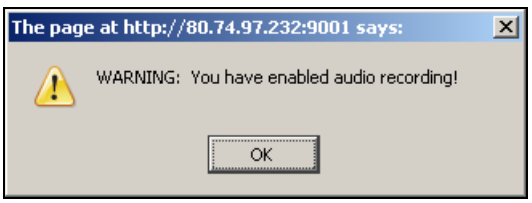


Figure 97: Audio-recording-enabled message

6. In the audio-recording-enabled message, click **OK**.

7. If you do not want audio to be incorporated with the video recorded from the camera, under **Audio Recording**, clear the **Enabled** checkbox.

   Note: The **Audio Quality** field is not currently in use. All audio recordings have medium quality.

   Note: If recording is not activated, this checkbox cannot be cleared.

8. If you want to use the Video Gateway's VMD features to detect and respond to motion in the camera's field of view, under **Motion Detection (VMD)**, select **Enabled**. Then follow the instructions below (*Video Motion Detection (VMD)*, page 88).

   Note: Be aware that on PTZ-controlled cameras each change of the camera position is interpreted by the VMD system as an event.

9. Configure the unit's response to interruptions in the transmission of the video signal from the camera to the unit as described below (*Configuring Video Lost*, page 94).

10. Configure the camera's recorder as described below (*Video Recording Settings*, page 96).

11. Click **Update**. Changes to brightness, contrast, and saturation are implemented immediately. Save the settings to implement them permanently. Save the settings and restart the unit to implement all other changes (see *Saving Configuration Changes*, page 125).

Configuring PTZ

This section explains how to configure the pan-tilt-zoom (PTZ) controls of cameras that support these features. Once the controls are configured, the camera can be aimed and zoomed remotely using any of the client applications.

NOTE: For information about connecting the PTZ controller to the Video Gateway unit, please refer to the unit's installation guide.

To configure pan-tilt-zoom controls (PTZ) in cameras that support these features:

1. In the **Camera** configuration screen, under **Camera Control (PTZ)**, select **Enabled**. The fields required to configure the PTZ settings are added to the screen:

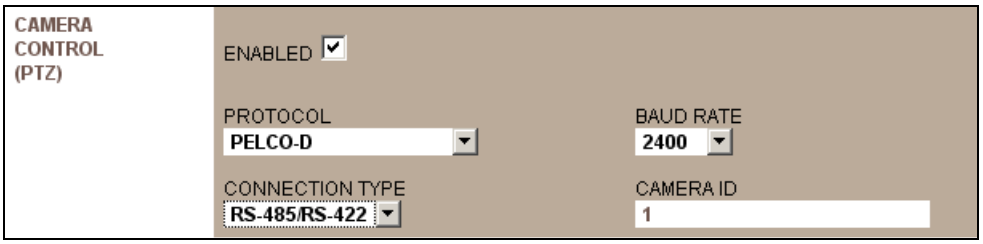


Figure 98: PTZ settings

2. Fill in the fields as follows:

Field	Description
Protocol	Select the communication protocol used by the camera for PTZ control. **Note:** Consult the camera documentation or the camera vendor for this information.

Field	Description
Baud Rate	Select the baud rate used by the camera for PTZ control. **Note:** Consult the camera documentation or the camera vendor for this information. **Note:** The other connection parameters required by the Video Gateway are: *one start bit*, *one stop bit*, *no parity*, and *8-bit*. If the camera uses different parameters, please contact your vendor.
Connection Type	Select the type of connection that is used for the PTZ controls – RS232 or RS-485. **Note:** Consult the camera documentation or the camera vendor for this information. **Note:** If multiple PTZ cameras that use the RS485 connection type are connected to the Video Gateway unit, they must all use the same protocol.
Camera ID	If the camera is connected using RS485, specify its ID number. **Note:** This number must correspond to the camera ID that is set on the camera. Consult the camera documentation for information about setting the camera ID. If multiple PTZ cameras using the RS485 connection are connected to the Video Gateway unit, they must have distinct camera IDs.

Video Motion Detection (VMD)

When Video Motion Detection (VMD) is enabled, the Video Gateway automatically checks the field of view (FOV) of the camera for changes. When changes are detected, the Video Gateway triggers a VMD *event*. You can configure the VMD itself, and the event notifications that are generated when VMD events are triggered.

About VMD Regions

The FOV is divided into regions, and the relative sensitivity of the motion detection can vary from region to region. For example, if a computer monitor in the FOV of the camera causes motion detection events to be triggered unnecessarily, you can choose to mark the region of the monitor for low sensitivity, or even no motion detection, while the rest of the FOV would have high sensitivity. In addition, you can completely black out regions from the FOV if you do not want them included in the video images at all.

If the camera is connected to the Video Gateway, and regions are enabled, the **Camera** configuration screen shows the current FOV of the camera. Regions that are included in motion detection are marked with a colored **x**: blue for low sensitivity, green for medium sensitivity, and red for high sensitivity. Regions that are not included in motion detection are not marked, and regions that are not included in the video images at all are marked with a black **x** on a white background.

NOTE: If VMD is enabled, but regions are not, middle sensitivity is applied to the entire FOV.

NOTE: If the camera is not connected to the Video Gateway, a blank tan image is displayed. It is recommended that you select the regions for inclusion in VMD when you can see an actual image.

About VMD Event Settings

A VMD event starts when motion is first detected and ends when there is no motion. However, in many cases what is seen by the human eye as one event can be interpreted by the VMD system as a series of motions with idle periods. When this occurs, a single motion event is broken into a series of short events. On the other hand, a motion event as detected by the VMD system can be exhaustingly long, such as a full day in a busy shop. In this case, we would prefer to break it down into a number of shorter events.

To solve these two problems, VMD event detection can be configured to control the length of events using the following parameters:

- **Debounce:** The interval between the end of motion as detected by the unit and the time when the event is defined as ending
- **Maximum length:** The maximum length of a single event

Separate events are defined when motion is not detected for a specified debounce interval. For example, if the interval is 15 seconds, event A ends when motion is not detected for 15 seconds, and event B begins if motion is detected again after more than 15 seconds have elapsed. If less than 15 seconds pass at the end of event A before additional motion is detected, event A is extended to include the additional motion.

Separate events are also defined when the maximum event length is reached. For example, if the maximum length of an event is 30 minutes, new events are generated every 30 minutes even if motion was detected without interruption during the entire period.

Consider, for example, a camera that is set up in a train station. During peak hours, there is usually constant motion. During off hours, lengthy intervals between motion events are common. The debounce interval is 30 seconds, and the maximum event length is 1800 seconds (30 minutes). During peak hours, event-triggered recording generates continuous recording because VMD events are constantly detected. However, the video is divided into 30-minute events, making it easy to check the video to see what happened during a particular time range. During off-peak hours, events are typically much shorter, and recording is not continuous.

About Responses to VMD Events

You can configure the unit to respond to VMD events in any or all of the following ways:

- Upload video of the event to an AVV server on the internet (see *Automatically Uploading Video to an AVV Server*, page 64). If e-mail notification recipients are defined in the **SMS and E-mail** screen, an e-mail message is sent to all the recipients when the VMD event begins and a second e-mail is sent when the video is successfully uploaded and is available for downloading by users. The e-mail notification includes a link to the video file on the server and a picture of the event. (Note that the file transfer starts at the end of the VMD event to ensure that it encompasses the entirety of the event.)
- Send VMD event notifications to the SMS and/or e-mail recipients defined for the system (see *SMS and E-mail Notifications*, page 58). E-mail notifications can optionally include a picture of the event, and, if AVV is activated, a link to video of the event.
- Turn an activator on or off.
- Move any PTZ camera connected to the Video Gateway that supports presets to a preset location.

These actions can be implemented when the event begins, when it ends, or both.

Configuring VMD Settings

This section explains how to configure VMD settings for a camera.

To configure video motion detection (VMD):

1. In the **Camera** configuration screen, under **Motion Detection (VMD)**, select **Enabled**. The fields required to configure the VMD settings are added to the screen:

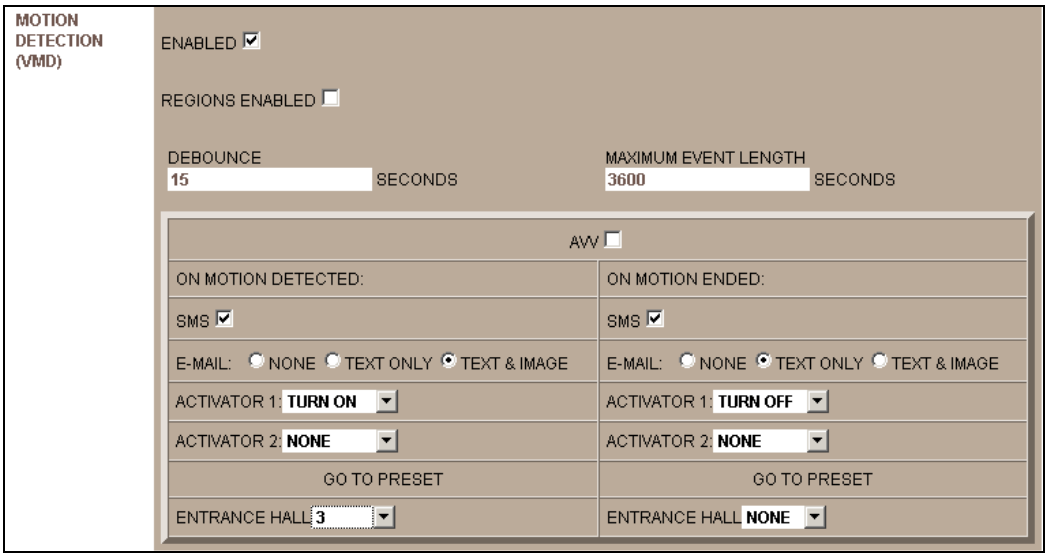


Figure 99: VMD settings

2. If you want to define the level of sensitivity of the motion detection that is implemented in the field of view (FOV), and perhaps specify different levels of sensitivity for different regions of the FOV, under **Regions**, select **Enabled**. Otherwise, skip to step 8.

   The fields required to define sensitivity levels and regions are added to the screen, and, if the camera is connected to the unit, the current FOV is displayed:

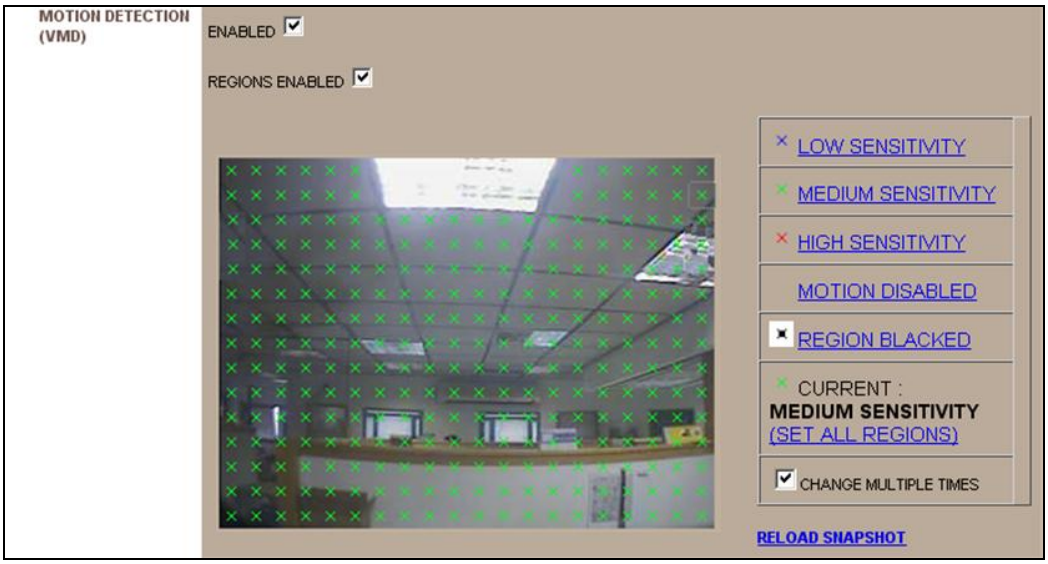


Figure 100: Region sensitivities in the FOV

Note: To update the snapshot of the camera's FOV, click **Reload Snapshot**.

Note: If the camera is not connected to the Video Gateway, the FOV is blank.

3. Click the sensitivity level you want to apply to a region or regions of the FOV. The selected level appears below the list under CURRENT. For example, in the figure above, MEDIUM SENSITIVITY is selected.

   Note: The following region marks can be used:

Mark	Description
Blue **x**	Low VMD sensitivity
Green **x**	Medium VMD sensitivity
Red **x**	High VMD sensitivity
None	No motion detection
Black **x** on white background	Region blacked: no video capture

4. If you want to set the entire FOV to the specified sensitivity level, click the relevant sensitivity level, and then click **Set all regions**. The **x**s marking the entire FOV are colored, or removed, accordingly.

5. If you want to apply the current sensitivity level to a rectangular area of the FOV (containing multiple region markers), do the following:

   - Make sure the **Change Multiple Times** checkbox is *selected*.
   - Click one corner of the rectangular area. A border appears around the region.

Figure 101: FOV with border around selected marker

   - Click the diagonally opposite corner of the rectangular area. The current sensitivity level is applied to the entire rectangle.

Figure 102: Sensitivity level applied to selected rectangle

6. If you want to apply the current sensitivity level to individual regions, do one of the following:

   - With the **Change Multiple Times** checkbox *selected*, double-click the region.
   - With the **Change Multiple Times** checkbox *cleared*, click the region.

   An **x** of the color representing the selected sensitivity level appears on the image (or the x is removed from the area, if the current sensitivity level is "Motion Disabled").

7. Repeat steps 3–6 as necessary for each type of sensitivity level you want to apply to a region of the FOV.

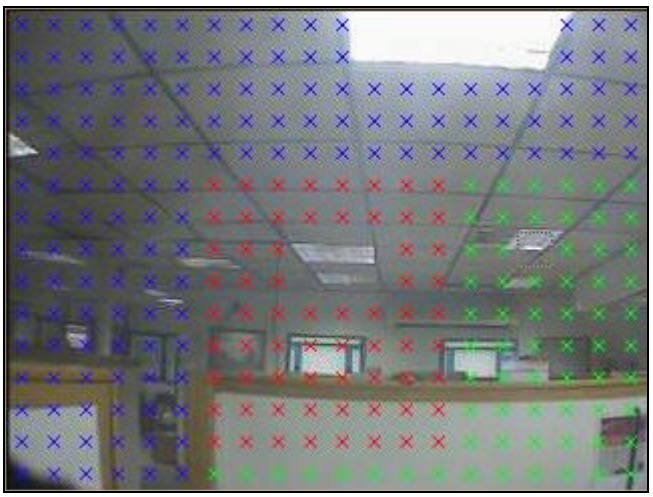


Figure 103: Region sensitivities set

8. Under **Debounce**, specify the minimum interval between events, in seconds. Range: 3–30 seconds. If motion is detected, and then ceases, the motion detection event is only closed if this amount of time has passed without any motion.

   Example: Motion is detected at 3:15:05 and continues until 3:15:45. After this, motion is not detected again until 3:16:10, 25 seconds after it was last detected. If the debounce interval is 15 seconds, two separate VMD events are triggered. If, on the other hand, the debounce interval is 30 seconds, only one VMD event is triggered, beginning at 3:15:05 and continuing past 3:16:10.

   Tip: If a lot of motion is likely to be detected by the camera, it is best to specify a relatively long debounce interval, so that the system does not generate a very long list of short events.

9. Under **Maximum Event Length**, specify the maximum length of a VMD event, in seconds. Range: 60–86400 seconds (1 minute – 1 day). If motion is detected continuously for longer than this period of time, a new event is automatically generated at the end of this interval.

10. Under **On Motion Detected**, select the actions that the Video Gateway should perform if motion is detected, as follows:

Field	Description
AVV	Select this option to have the Video Gateway send video of the event to an AVV server for downloading. The video is uploaded to the site defined in the **AVV** screen, in the format defined there (see *Automatically Uploading Video to an AVV Server*, page 64), and e-mail notifications are sent to all e-mail recipients (see *SMS and E-mail Notifications*, page 58). **Note:** The upload of the video clip begins at the *end* of the motion event. Nevertheless, the first e-mail notification is sent when the event is first detected. Thus, the video clip may not be available yet when you receive this e-mail notification. A second e-mail notification is sent when uploading is completed. **Note:** This feature only works if recording (either event-triggered or continuous) is activated for the camera (see *Video Recording Settings*, page 96). **Note:** This option only appears if AVV is activated for the Video Gateway (see *Automatically Uploading Video to an AVV Server*, page 64).
SMS	Select this option to have the Video Gateway send SMS notifications when a motion event is detected. Messages are sent to the recipients specified in the **SMS and E-mail** screen, in the format defined there (see *SMS and E-mail Notifications*, page 58).
E-mail	Select the desired type of e-mail notification, as follows: • **None:** Do not send e-mail notifications when a motion event is detected. • **Text only:** When a motion event is detected, send e-mail notifications. Include a text message in the e-mail, but do not attach any images to the message. • **Text & image:** When a motion event is detected, send e-mail notifications that include both a text message and a picture of the first frame of the event. **Note:** E-mail messages are sent to the recipients specified in the **SMS and E-mail** screen, in the format defined there (see *SMS and E-mail Notifications*, page 58). **Note:** If **AVV** is selected, **Text & image** is automatically selected for this field, and cannot be disabled. A single e-mail containing both the standard notification text and the AVV notification is sent at the beginning of each event. In addition, a text-only e-mail is sent when the file transfer is completed. **Note:** If **AVV** was once selected, and has since been cleared, **Text & image** remains selected for this field until the selection is changed manually. If it is not changed, AVV is not activated, but notifications with snapshots are sent at the beginning of each event.
Activator 1 Activator 2	Select the action that each activator should perform when a motion detection event begins: • **Turn on**: Set the activator line to "high." • **Turn off**: Set the activator line to "low." • **None**: Do not change the activator's setting. **Note:** For additional information about working with activators, see *Configuring Sensor and Activator* Settings, page 110. **Note:** The **Activator 2** field only appears for the HVG, MVG, and UVG.

Field	Description
Go To Preset	All PTZ cameras connected to the Video Gateway that support presets are listed below this heading. If you want one of these cameras to automatically aim at a preset location when a motion detection event begins, beside the name of the camera, select the number of the preset location. **Note:** Preset locations are defined and assigned numbers using a client application such as the MultiClient. For additional information, please refer to the relevant client application guide. **Note:** If no PTZ cameras are connected to the unit, this field does not appear.

11. Under **On Motion Ended**, select the actions that the Video Gateway should perform when a motion detection event ends, as described above.

Configuring Video Lost

The Video Gateway monitors the camera connections. If the video signal from a camera is lost – i.e., the Video Gateway is not receiving video from it, either because of a malfunction in the camera, or because the camera has been disconnected from the unit or from its power source – the unit can respond in any or all of the following ways:

- Upload video of the event to an FTP server on the internet (see *Automatically Uploading Video to an AVV Server*, page 64). If e-mail notification recipients are defined in the **SMS and E-mail** screen, an e-mail message is sent to all the recipients when the Video Lost event begins and a second e-mail is sent when the video is successfully uploaded and is available for downloading by users. Each e-mail notification includes a link to the video file on the server and a picture of the event.
- Send event notifications to the SMS and/or e-mail recipients defined for the system (see *SMS and E-mail Notifications*, page 58). If AVV is activated, e-mail notifications include a link to video of the event that includes the seconds preceding the time when the video signal was lost (the *pre-record*; see *Video Recording Settings*, page 96). Video-Restored e-mail notifications can optionally include a picture of the event.
- Turn an activator on or off.
- Move any PTZ camera connected to the Video Gateway that supports presets to a preset location.

These actions can be implemented when the event begins, when it ends, or both.

To configure video lost detection:

1. In the **Camera** configuration screen, under **Video Lost**, select the actions that the Video Gateway should perform if video reception from the camera is interrupted, as described below.

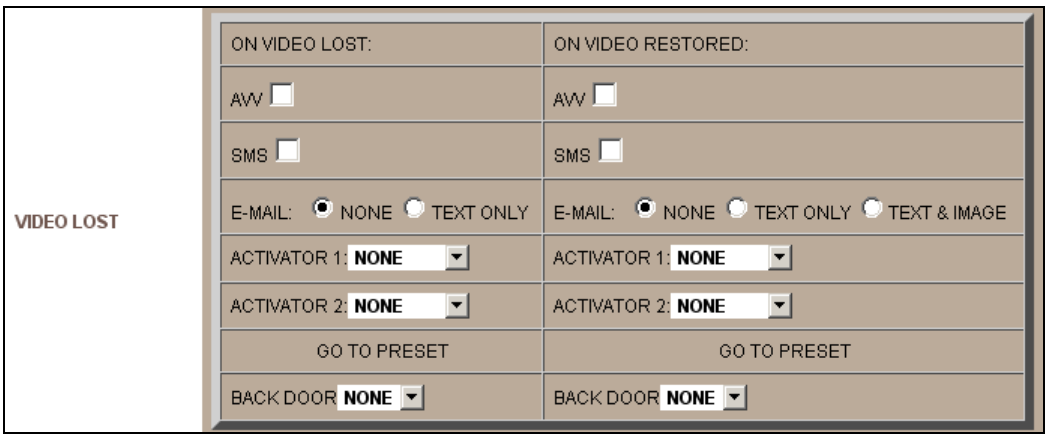


Figure 104: Video Lost settings

Field	Description
AVV	Select this option to have the Video Gateway send video of the seconds preceding the video-lost event to an AVV server for downloading. The video is downloaded to the site defined in the **AVV** screen, in the format defined there (see *Automatically Uploading Video to an AVV Server*, page 64), and e-mail notifications are sent to all e-mail recipients (see *SMS and E-mail Notifications*, page 58). **Note:** Two e-mail notifications are sent – one when the event is first detected, and the other when uploading of the video to the AVV server is completed. Thus, the video clip may not be available yet when you receive the first e-mail notification. **Note:** This feature only works if recording (either event-triggered or continuous) is activated for the camera (see *Video Recording Settings*, page 96). **Note:** For video-restored events, a few seconds of video following the restoration of the video connection are recorded. **Note:** This option only appears if AVV is activated for the Video Gateway (see *Automatically Uploading Video to an AVV Server*, page 64).
SMS	Select this option to have the Video Gateway send SMS notifications when a video-lost event is detected. Messages are sent to the recipients specified in the **SMS and E-mail** screen, in the format defined there (see *SMS and E-mail Notifications*, page 58).
E-mail	Select the desired type of e-mail notification, as follows: • **None:** Do not send e-mail notifications when a video-lost (or video restored) event is detected. • **Text only:** When a video-lost (or video restored) event is detected, send e-mail notifications. Include a text message in the e-mail, but do not attach any images to the message. • **Text & image:** When a video-restored event is detected, send e-mail notifications that include both a text message and a picture of the first frame after video was restored. **Note:** This option is not available for video-lost notifications. **Note:** E-mail messages are sent to the recipients specified in the **SMS and E-mail** screen, in the format defined there (see *SMS and E-mail Notifications*, page 58). **Note:** For video-restored notifications, if **AVV** is selected, **Text & image** is automatically selected for this field. A single e-mail containing both the standard notification text and the AVV notification is sent at the beginning of each event. In addition, a text-only e-mail is sent when the file transfer is completed. **Note:** For video-restored notifications, if **AVV** was once selected, and has since been cleared, **Text & image** remains selected for this field until the selection is changed manually. If it is not changed, AVV is not activated, but notifications with snapshots are sent at the beginning of each event.
Activator 1 Activator 2	Select the action that each activator should perform when a video-lost event begins: • **Turn on**: Set the activator line to "high." • **Turn off**: Set the activator line to "low." • **None**: Do not change the activator's setting. **Note:** For additional information about working with activators, see *Configuring Sensor and Activator* Settings, page 110. **Note:** The **Activator 2** field only appears for the HVG, MVG, and UVG.
Go To Preset	All PTZ cameras connected to the Video Gateway are listed below this heading. If you want one of these cameras to automatically aim at a preset location when a video-lost event begins, beside the name of the camera, select the number of the preset location.

Field	Description
	Note: Preset locations are defined and assigned numbers using a client application such as the MultiClient. For additional information, please refer to the relevant client application guide. **Note:** If no PTZ cameras are connected to the unit, this field does not appear.

2. Under **On Video Restored**, select the actions that the Video Gateway should perform when a video-lost event ends – when the Video Gateway begins to receive a video signal from the camera again – as described above.

Video Recording Settings

The Video Gateway can record a video stream from each camera connected to it. Each stream is called a "recorder." Creating a recorder allocates space on the storage media of the Video Gateway unit for the video stream that is to be recorded. Recorded video can be downloaded from the storage media for viewing and saving on the client or for viewing on a CCTV monitor (when touch/mouse is enabled).

The available space on the storage media limits how much disk space can be allocated for each recorder. You can choose what should be done when the disk space allocated for a recorder is used up: either the earliest part of the recording is discarded and overwritten by the current recording, or recording stops until you erase the recordings manually.

Video can be recorded continuously or only when triggered by events. Event-triggered recording can be used to minimize disk usage, so that more time can be covered by a recorder before its allocated disk space is used up. For example, a second of high-quality recording requires about 16 KB of disk space. For a full day of high-quality video recording, this translates into 1.3 GB of disk space. By contrast, if there are 25 events in a day, and the recorder records 20 seconds for each event, only 8 MB of disk space are needed for the day.

VMD, sensor, and activator events can function as triggers for event-triggered recording. Each recorder can be configured to respond to VMD events detected by the camera from which the recorder records or from any of the sensors connected to the Video Gateway.

When an event occurs, it is often useful to see what happened immediately before and after it. For this reason, event-triggered recording can be configured to record a set number of seconds before and after each event ("pre-record" and "post-record"). To accomplish this, the Video Gateway always records the specified number of pre-record seconds, and then discards this data if no events are detected. For example, if the pre-record is five seconds, the system always stores the last five seconds of video. If an event is detected, this video is saved as the pre-record recording. Otherwise, it is deleted. The total recording time for each event is the sum of the pre-record time, the time of the event itself, and the post-record time.

Another way you can control the disk usage is through the recording *quality* settings. The system supports three standard quality levels, high, medium, and low. The lower the quality setting, the less disk space is required for each second of recording. Obviously, some stream quality is lost when lower quality settings are used. All three standard quality settings produce recordings in SIF size when the unit's video resolution is VGA and recordings in CIF size when the video resolution is D1 (see *Video Resolution*, page 19). High quality is the optimal recording configuration, and is recommended for use whenever possible. For information about the framerates and bitrates used for the standard quality levels, see *Advanced Recorder Settings*, page 97.

Configuring Video Recording

This section explains how to configure video recording settings for a camera.

➪ *To set up video recording for a camera:*

1. In the **Camera** configuration screen, under **Recording Type**, select the desired type of recording, as follows:
   - **Continuous:** Recording takes place all the time, regardless of whether events occur or not
   - **By Event:** Recording only takes place when an event occurs

- **None:** Recording is not activated for the camera

If you select **By Event**, the fields required to configure the event-triggered recording are added to the screen:

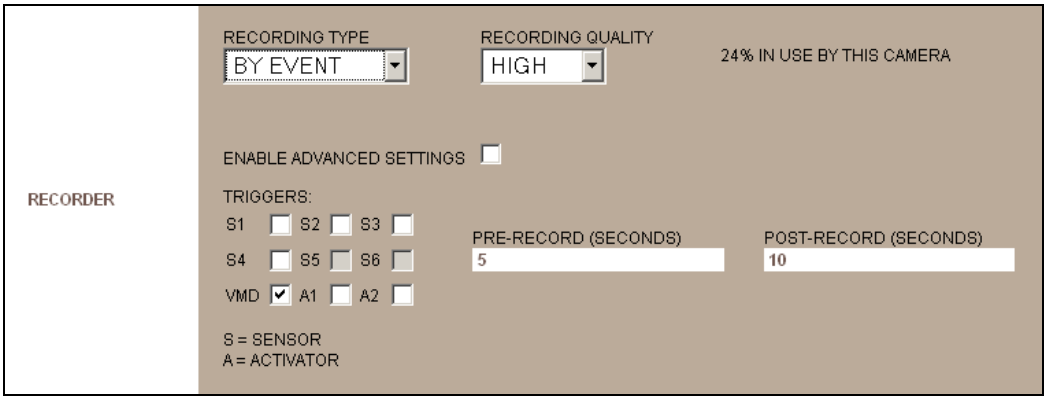


Figure 105: Settings for event-triggered recording

2. Under **Recording Quality**, select the recording quality (**High**, **Medium**, or **Low**).

   Note: For information about the data rates represented by the standard quality levels and about selecting custom recording quality settings, see *Advanced Recorder Settings*, page 97.

   Note: The percentage of available recording space that is allocated to the camera is indicated in the screen. (In the illustration above, 24% is allocated to the camera.) This value is set in the Advanced Settings. For additional information, see *Advanced Recorder Settings*, page 97.

3. If the recorder is event-triggered, select the triggers that will cause the recording to start:

   - **VMD:** If VMD is enabled for the camera (see *Video Motion Detection (VMD)*, page 88), and you want VMD events to trigger event recording, select **VMD**.
   - **Sensor events**: If you want sensor events to trigger event recording, select the sensors you want to function as triggers. For example, select **S1** to use Sensor 1 as a trigger.
   - **Activator events**: If you want activator events to trigger event recording, select the activators you want to function as triggers. For example, select **A1** to use Activator 1 as a trigger.

   Note: VMD is not automatically selected when it is enabled. Furthermore, if none of the sensors or activators is selected, and VMD is not selected, no recording will take place.

4. If the recorder is event-triggered, fill in the pre-record and post-record values as follows:

   - **Pre-record:** The number of seconds before each event that should be included in the recording of the event. Range: 0–9 seconds.
   - **Post-record:** The number of seconds following each event that should be included in the recording of the event.

CAUTION: When you update the quality or size values in this screen, all the recorded video from this camera that is currently stored on the storage media is deleted.

Advanced Recorder Settings

Advanced settings allow you to customize the recorder's video quality settings. You can choose whether or not recordings are automatically erased to make room for new recordings, and set the allocation of disk space among all the recorders connected to the Video Gateway unit.

When advanced settings are activated, you can choose to record larger VGA or D1 frames, or smaller QSIF or QCIF frames, and you can select custom quality settings. Quality is defined by a bitrate/framerate pair. The

following table summarizes the recommended settings and the approximate disk usage at each setting. The recommended settings for the SIF and CIF frames are the standard settings used by the system if you do not customize the settings.

Resolution	Frame Size	High Quality	Medium Quality	Low Quality
VGA	QSIF (small frame)	10 FPS 32 KBPS 338 MB/day	6 FPS 16 KBPS 169 MB/day	4 FPS 8 KBPS 84 MB/day
	SIF (medium-sized frame)	10 FPS 128 KBPS 1.3 GB/day	7 FPS 48 KBPS 506 MB/day	4 FPS 24 KBPS 253 MB/day
	VGA (large frame)	7 FPS 256 KBPS 2.64 GB/day	5 FPS 128 KBPS 1.3 GB/day	4 FPS 64 KBPS 675 MB/day
D1	QCIF (small frame)	10 FPS 64 KBPS 675 MB/day	6 FPS 32 KBPS 338 MB/day	4 FPS 16 KBPS 169 MB/day
	CIF (medium-sized frame)	10 FPS 160 KBPS 1.6 GB/day	7 FPS 48 KBPS 506 MB/day	4 FPS 24 KBPS 253 MB/day
	D1 (large frame)	7 FPS 320 KBPS 3.3 GB/day	5 FPS 256 KBPS 2.64 GB/day	4 FPS 128 KBPS 1.3 GB/day

Table 1: Recommended video quality settings

NOTE: Bitrate is defined in *kilobits per second* (*KBPS*), and framerate is defined in *frames per second* (*FPS*).

NOTE: At times, real-time demands on system resources may make it temporarily impossible for the system to adhere to the specified quality settings. In this case, the system automatically regulates itself to ensure the best use of available resources. When necessary, it may temporarily lower the framerate of a stream slightly in order to accommodate all of its immediate processing requirements. The quality of individual frames in the stream is not reduced.

NOTE: VGA and D1 recording introduces extra load on the unit. Therefore, VGA recording should be used sparingly.

CAUTION: When you update the recorder's frame-size settings, all the recorded video that is currently stored on the storage media is deleted.

By default, the recorders are allocated equal shares of the available disk space. If you wish, you can allocate the disk space differently. For example, if three recorders are event triggered, and the other records continuously, you may wish to allocate 20% of the disk space to the event-triggered recorders, and 75% to the continuous recorder. (It is recommended to leave approximately 5% of the disk space free for management overhead.) This allocation would maximize the recording time available for continuous recording without significantly limiting the disk space available for the recording of events.

Video storage normally follows the FIFO (first-in, first out) model: when the disk space allocated to a recorder is full, the system automatically erases the earliest recordings from the camera to make space available for new recordings. If this is not desirable, linear recording can be implemented instead. In this case, recording ceases for the camera when the disk space allocated to it is full. Recording from the camera can only be started again after the existing recordings are manually erased (see *Erasing Recorded Video*, page 104). If you select linear recording, you can choose to receive e-mail notifications when the disk space is nearly full and when it is completely full. When linear recording is selected, **(WP)** (Write Protection) appears in the **Camera Summary** screen after the recording type.

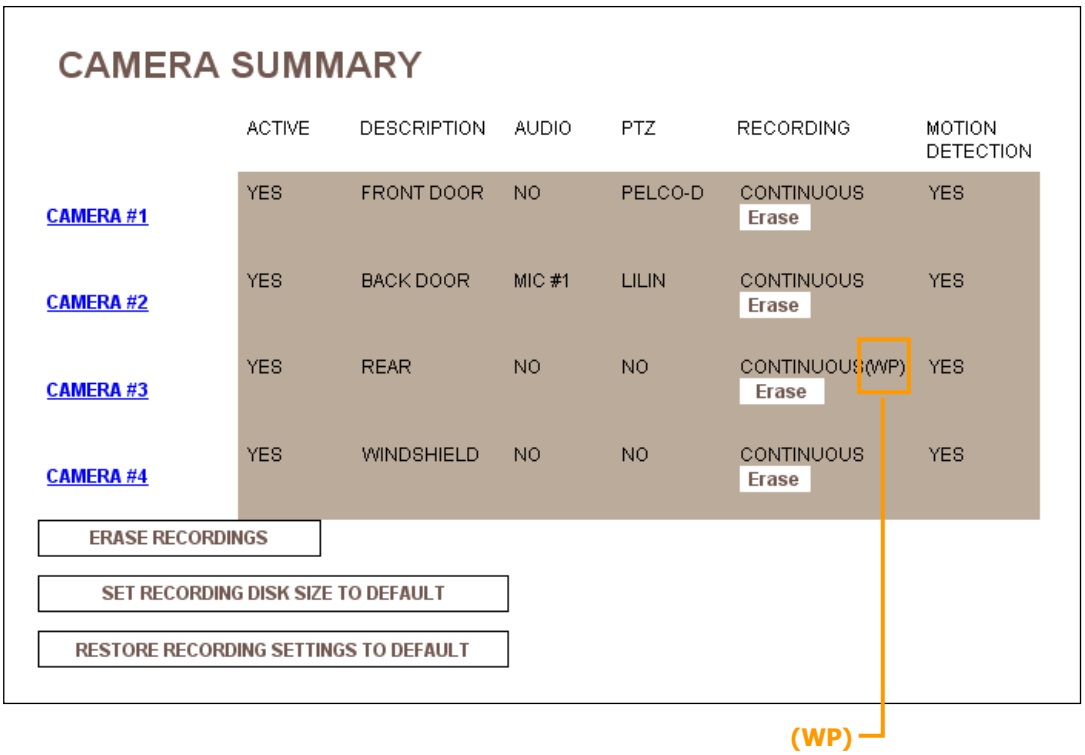


Figure 106: (WP) indicating linear recording (Write Protection) is selected

CAUTION: When you update a recorder's disk allocation or size settings, all the recorded video that is currently stored on the storage media is deleted.

NOTE: TV-Out makes use of the same system resources as the unit's video recorder. As a result, the global framerate available for recording is reduced somewhat when TV-Out is enabled. For additional information, see *Configuring a CCTV Monitor (TV-Out)*, page 28.

To set advanced recorder settings for a camera:

1. In the bottom of the **Camera** configuration screen, under **Recorder**, select **Enable Advanced Settings**. The fields required to configure advanced settings are displayed along with the other recorder settings above the checkbox:

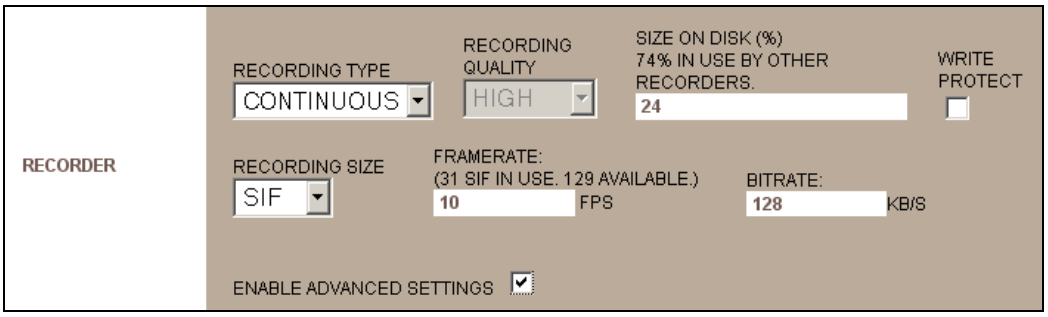


Figure 107: Advanced recorder settings

2. To modify the disk allocation for this recording stream, under **Size on Disk**, specify the proportion of the disk space to allocate for the stream, as a percent value.

   The percentage that is already allocated for the other cameras is indicated above the field – for example, "33% in use by other recorders." You can choose to allocate as much of the remaining disk space to this recorder as you wish. For example, if 33% of the total available disk space is already allocated to the other recorders, you could choose to allocate an additional 60% to this recorder. This would mean that 93% of the disk space is allocated to all the recorders together. The sum of the **Size on Disk** values of all the recorders cannot exceed **98**.

   Note: To modify the allocation of the other recorders, navigate to the **Camera** configuration screen of each recorder and modify the value in the **Size on Disk** field there.

   Note: To reset all disk allocations to their default values, in the **Camera Summary** screen, click **Set Recording Disk Size to Default**.

3. If you want to record linearly, select **Write Protect**. The **Warn When ____% Full** field is added to the screen. .

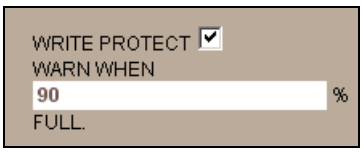


Figure 108: Warn When ____% Full field

   If **Write Protect** is selected, recording continues until all the allocated disk space is full. To restart recording, you must manually erase the existing recordings (see *Erasing Recorded Video*, page 104).

   If **Write Protect** is not selected, recording follows the FIFO model: when the disk allocation is full, the earliest recordings from this camera are erased to make room for new recordings. Skip to step 5.

4. In the **Warn When ____% Full** field, specify whether you want the Video Gateway to send warning messages via e-mail about the availability of storage space, as follows:

Value	Description
0	No warning messages are sent.
1 – 99	A warning message is sent when the disk space reaches the threshold defined in this field (e.g., "90" means a message is sent when the disk space is 90% full). An additional message is sent when the disk space is entirely full and recording has ceased. **Note:** Warning messages are sent to all the e-mail recipients listed in the **SMS and E-mail** screen (see *SMS and E-mail Notifications*, page 58).

5. To modify the video quality settings, adjust the values in the following fields as necessary:

Field	Description
Recording size	If the Video Gateway uses VGA resolution, you can choose from the following frame sizes: • VGA: Large picture • SIF: Medium-sized picture • QSIF: Small picture If the Video Gateway uses D1 resolution, you can choose from the following frame sizes: • D1: Large picture • CIF: Medium-sized picture • QCIF: Small picture • For additional information, see *Video Resolution*, page 19.
Framerate	Enter the desired number of frames per second. **Note:** The note in parentheses above the field shows the global system framerate – the maximum number of frames the unit can process per second (from all cameras), and the maximum framerate available for this camera given the framerates that are already allocated to the other cameras in the system.
Bitrate	Enter the desired number of bits per second (maximum: 1500 KBPS).

Note: If you select custom video quality settings that exactly match a standard setting, the standard setting is automatically selected. For example, if you select recording size SIF, framerate 10, and bitrate 128, the value of the **Recording Quality** field is automatically switched to `High`, and advanced settings are hidden from view.

Note: The quality settings you select here become the default settings for downloading live video of the size you select. For example, if you select QSIF with a framerate of 8 and a bitrate of 24, these settings become the "High" quality setting for all QSIF streams that are downloaded to client applications.

Restoring Default Recording Settings

You can choose to restore all the recording settings to their default values. If you do this, the recording settings of all the cameras are restored to the following settings:

- **Recording Type:** Continuous
- **Recording Quality:** High
- **Write Protection:** Off
- **Advanced Settings:** Not enabled

When the default recording settings are restored, all recorded video is erased, and the storage space is allocated evenly among all of the cameras. Other configuration settings are not affected.

➪ *To restore the default recording settings:*

1. In the **Camera Summary** screen, click **Restore Recording Settings to Default**.

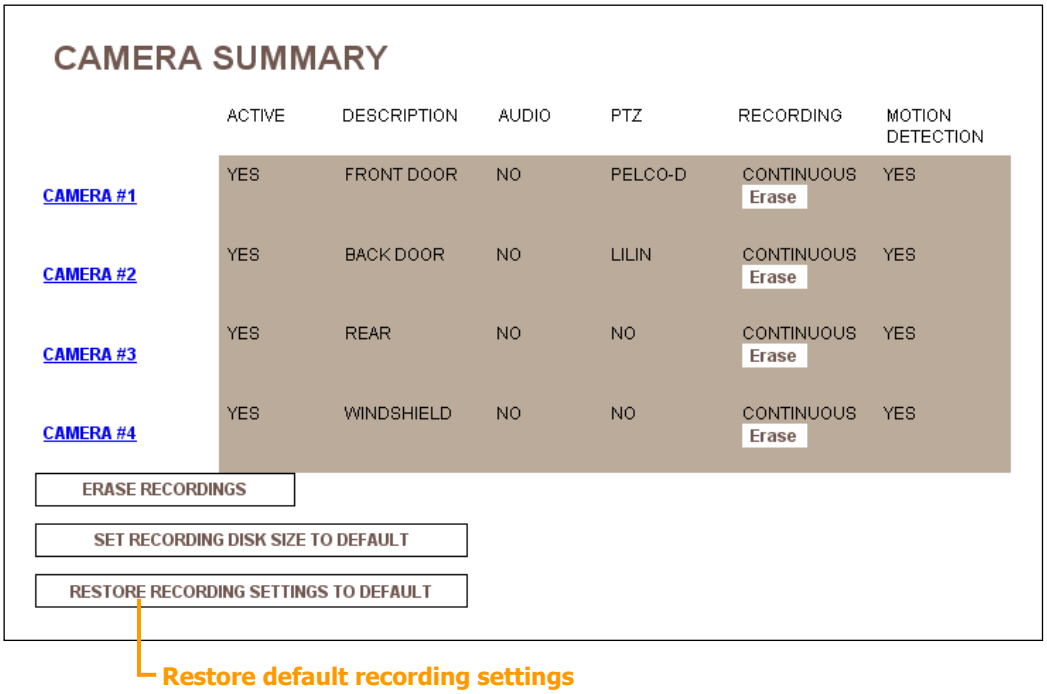


Figure 109: Restoring default recording settings

You are prompted to confirm that you want to erase all the recordings and restore the disk allocation:

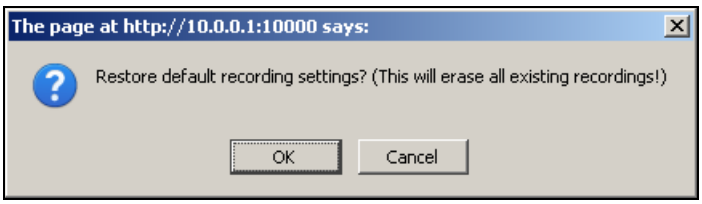

The page at http://10.0.0.1:10000 says:
Restore default recording settings? (This will erase all existing recordings!)
OK
Cancel

Figure 110: Confirm restoration prompt

Note: This prompt appears even if no recorded video exists.

2. Click **OK**. An *Update Confirmation* (ATTENTION) message appears below the **Main Menu**.

Figure 111: Update Confirmation message

3. Click **Click here to go to Save Settings page**. The **Save Settings** page opens. If any of the cameras were previously configured to record full-screen VGA or D1 frames, or quarter-sized QSIF or QCIF frames, a warning message is displayed. The message lists the cameras that were configured to record in these sizes; the recordings from these cameras will be erased.

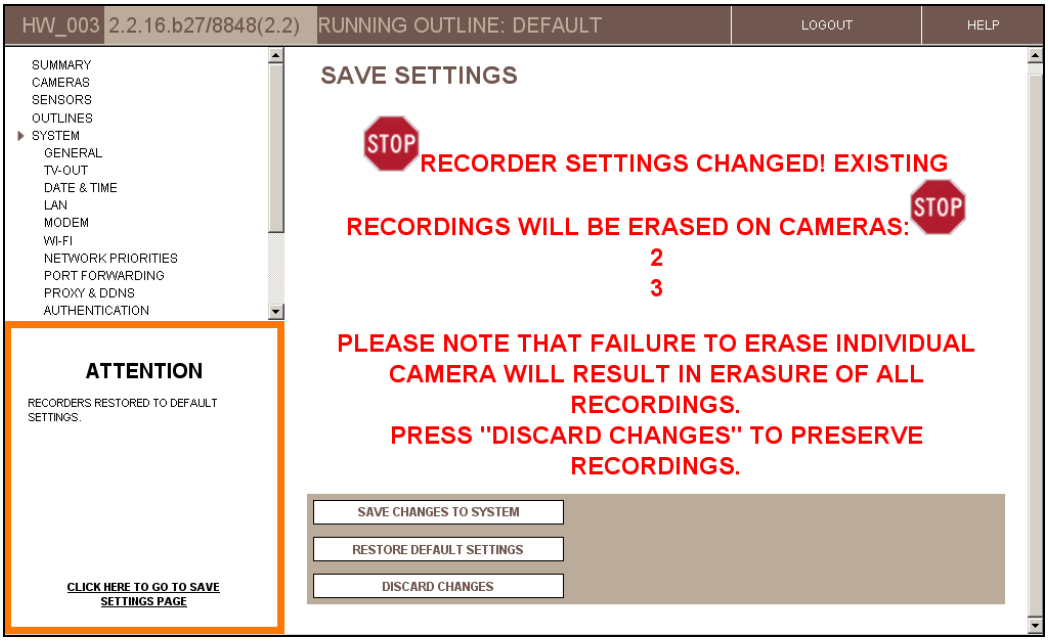


Figure 112: Warning message in Save Settings page

4. Click **Save Changes to System**. The default recording settings are restored, and the **System Restart Page** screen opens:

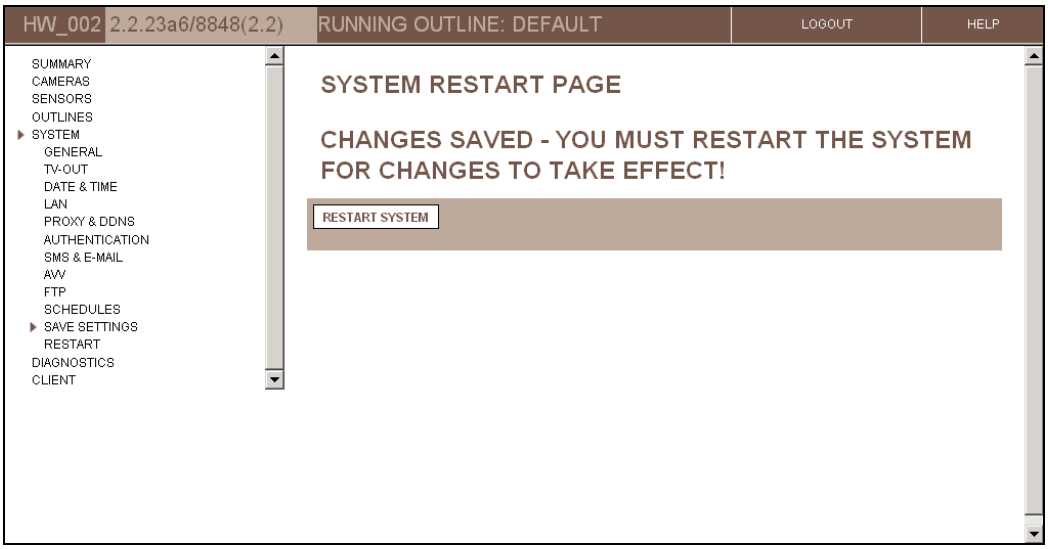


Figure 113: System Restart Page screen

Note: From the time you click **Save Changes to System,** the existing video recordings become inaccessible. No additional recording can take place until the unit is restarted.

5. Click **Restart System**. The video recordings from the cameras listed are erased, and the unit restarts. Recording begins again after the unit restarts.

Erasing Recorded Video

Recorded video is normally stored on the storage media until one of the following occurs:

- The video is over-written by newer video.
- You change the recording size or disk allocation settings of one of the cameras (see *Advanced Recorder Settings*, page 97).

You can also erase all recorded video from the storage media manually in one of the following ways:

- Erase all recorded video from a selected camera
- Erase all recorded video from all cameras but leave the current disk allocation unchanged
- Erase all recorded video from all cameras and reset the disk allocation to its default settings

Erasing All Recorded Video from a Camera

You can choose to erase all the recorded video from a selected camera that is stored on the unit's storage media. This is particularly useful if you have chosen to record linearly (selected **Write Protect** in the camera's advanced recorder settings) and the disk space allocated to the camera is full.

➪ *To erase all recorded video from a camera:*

1. In the **Camera Summary** screen, in the **Recorder** column, in the camera's row, click **Erase**.

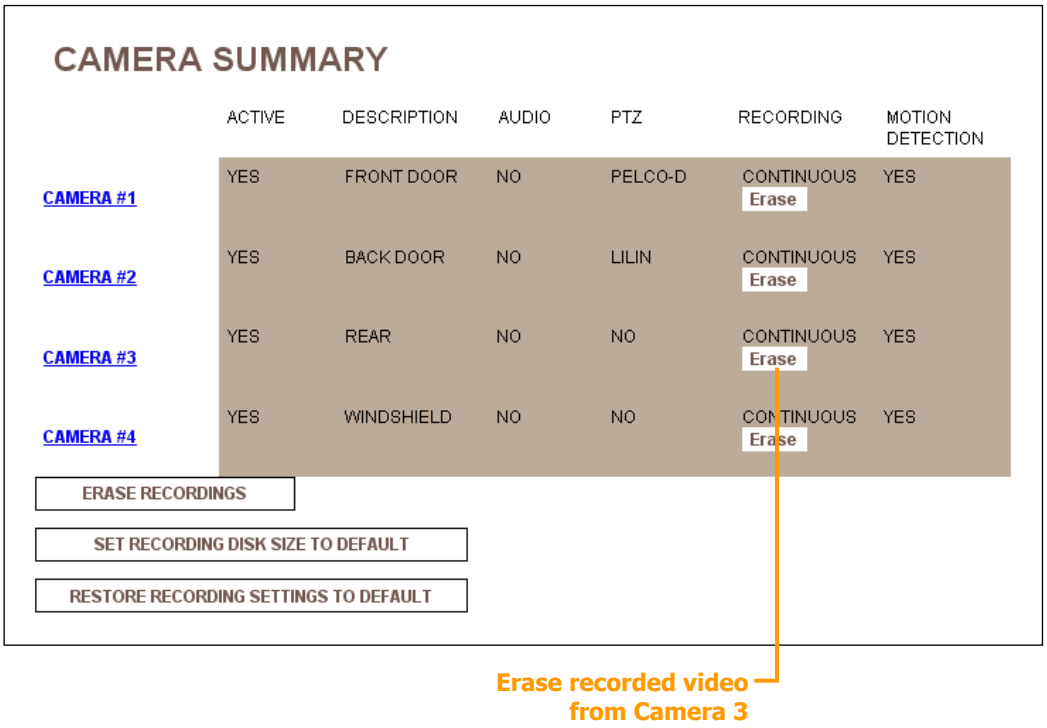


Figure 114: Erasing video from a camera

2. You are prompted to confirm that you want to erase the video:

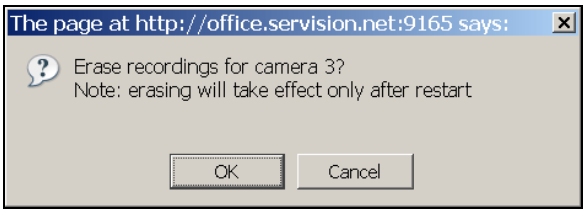

The page at http://office.servision.net:9165 says:
Erase recordings for camera 3?
Note: erasing will take effect only after restart
OK
Cancel

Figure 115: Confirmation prompt

3. Click **OK**. The recordings are erased, and a confirmation message appears below the **Main Menu**.

Figure 116: Confirmation that recordings were erased

4. Restart the unit.

   Note: No recording will take place from the camera until the unit is restarted (see *Resetting the Unit*, page 161).

Erasing All Recorded Video from the Storage Media

This section explains how to erase all recorded video from the unit's storage media without changing the disk space allocated to each recorder.

To erase all recorded video from the unit's storage media:

1. In the **Camera Summary** screen, click **Erase Recordings**. The **Erase Recordings** screen appears.

Figure 117: Erase Recordings

2. Select **Confirm Erase**, and then click **Erase**. The contents of the storage media are erased, and a **System Restart** screen is displayed.

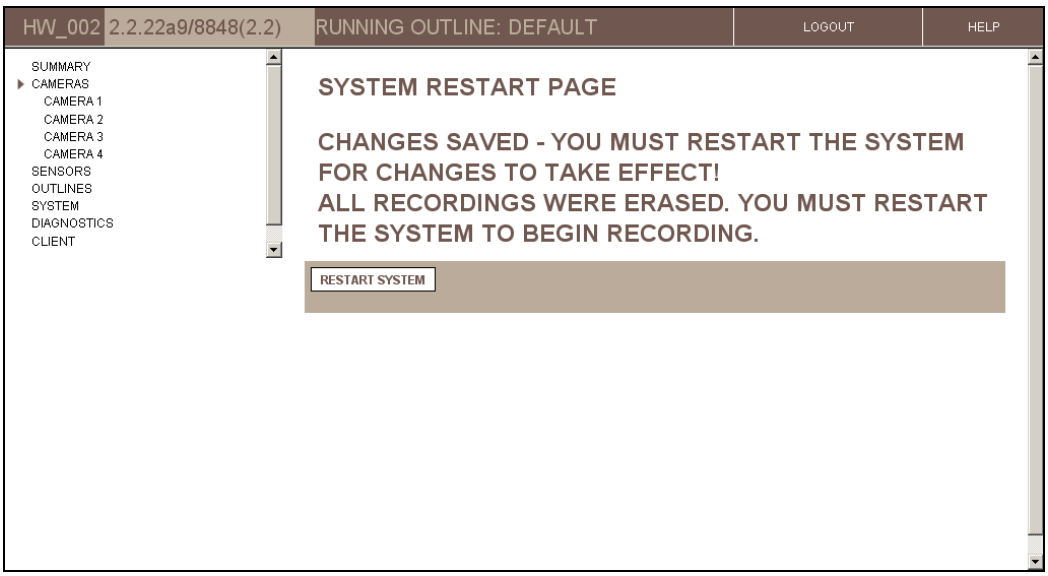


Figure 118: System Restart screen after recordings are erased

3. Click **Restart System**. The unit restarts and recording begins again in accordance with the recording settings defined in the camera configuration. You are automatically logged out of the configuration utility, and a confirmation message appears:

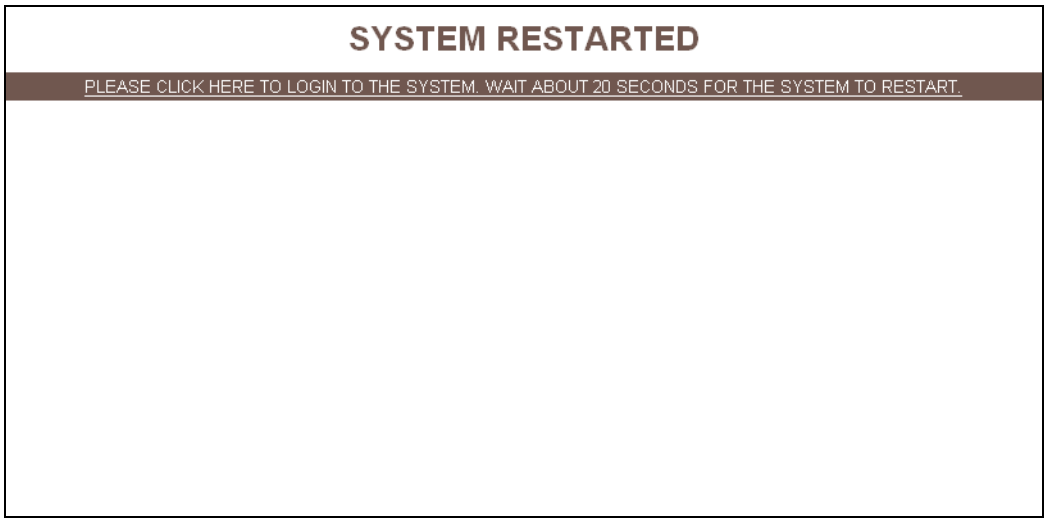


Figure 119: Restart confirmation message

Note: To continue configuring the unit, click the link in the message and log into the configuration utility again.

Restoring the Default Disk Allocation

This section explains how to erase all recorded video from the unit's storage media and, at the same time, restore the disk space allocation to its default settings.

To restore the default disk allocation:

1. In the **Camera Summary** screen, click **Set Recording Disk Size to Default**.

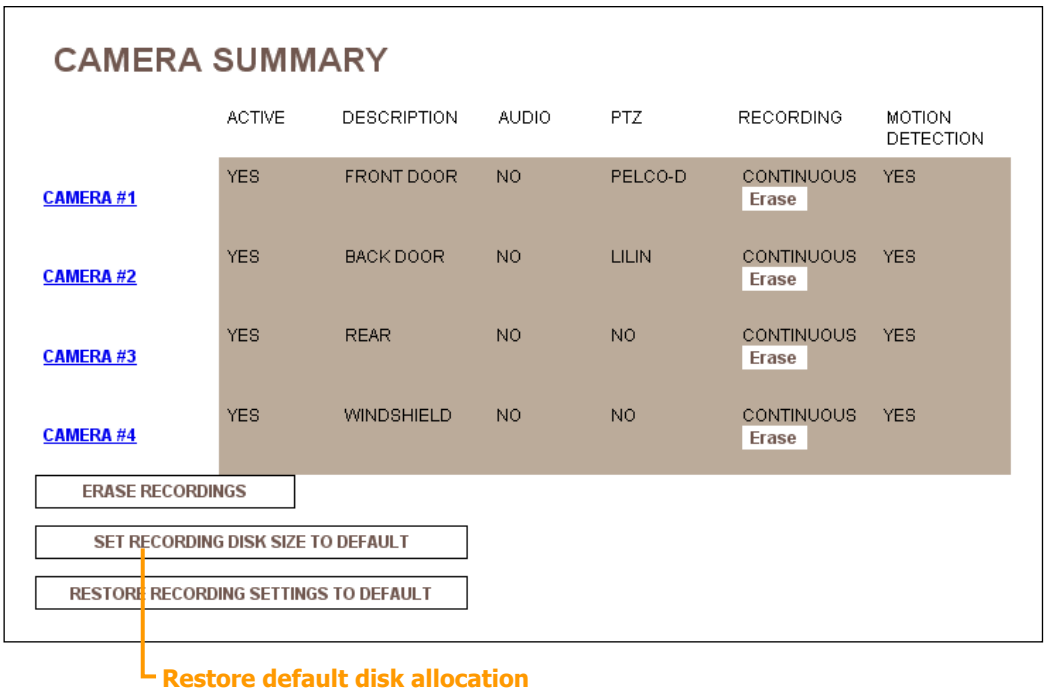


Figure 120: Restoring the default disk allocation

You are prompted to confirm that you want to erase all the recordings and restore the disk allocation:

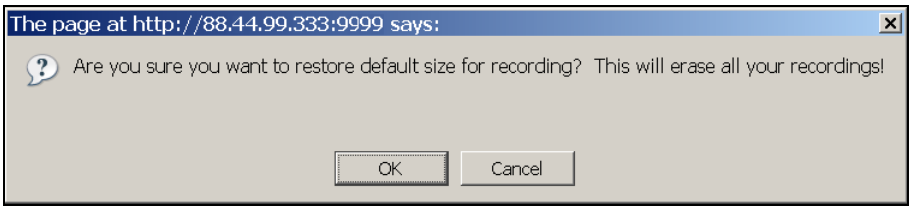

The page at http://88.44.99.333:9999 says:
Are you sure you want to restore default size for recording? This will erase all your recordings!
OK
Cancel

Figure 121: Confirm disk reallocation prompt

2. Click **OK**. An *Update Confirmation* (ATTENTION) message appears below the **Main Menu**.

Figure 122: Update Confirmation message

3. Click "Click here to go to Save Settings page." The **Save Settings** page opens, with a warning message displayed:

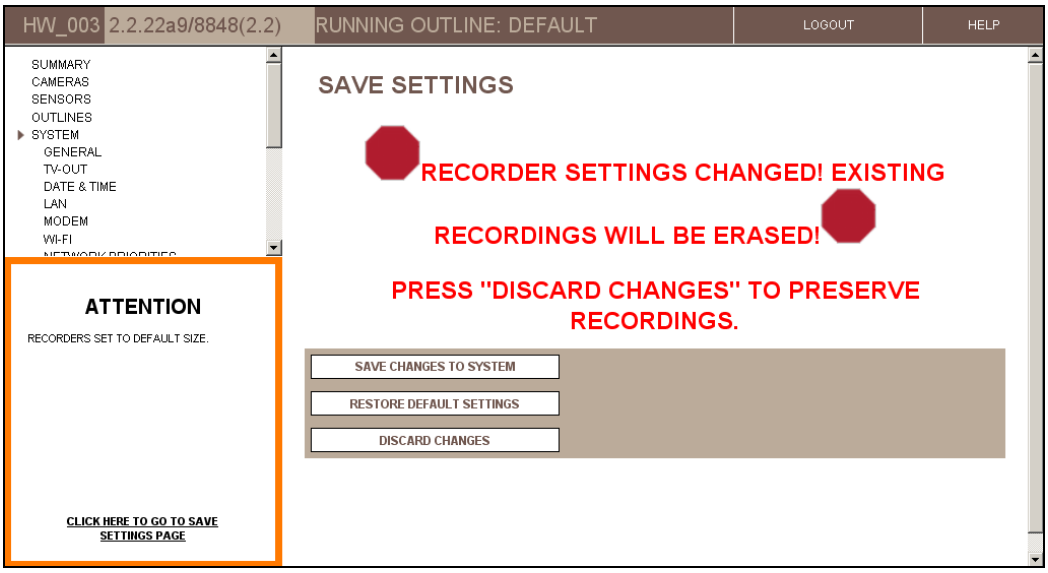


Figure 123: Warning message in Save Settings page

4. Click **Save Changes to System**. The default disk allocation is restored, and the **System Restart Page** screen opens:

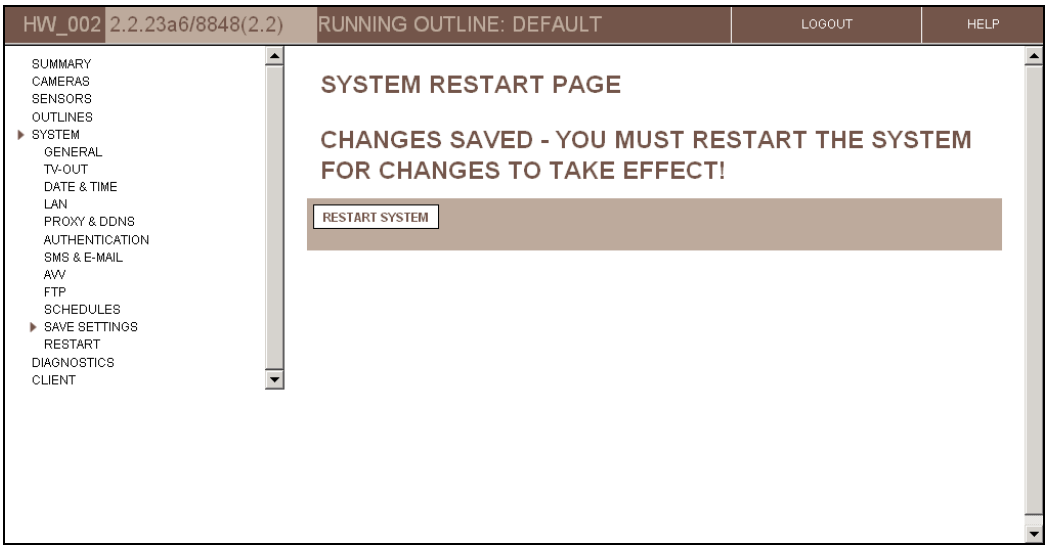


Figure 124: System Restart Page screen

Note: From the time you click **Save Changes to System,** the existing video recordings become inaccessible. No additional recording can take place until the unit is restarted.

5. Click **Restart System**. The existing video recordings are erased, and the unit restarts. After the unit restarts, recording begins again.

Configuring Sensor and Activator Settings

Sensors are devices that detect events such as a door being opened or a light being turned on. Activators are external devices such as alarms and lights that can be turned on when a sensor is activated.

CVG and CVG-M models support one sensor and one activator. Up to four sensors and two activators can be connected directly to the MVG, or UVG, and up to six sensors and two activators can be connected directly to the HVG.

Up to 16 additional sensors can be connected to Video Gateway units through an ADAM module. Alternatively, additional sensors and activators can also be connected using an IA relay board, but they cannot be configured through the Video Gateway's configuration utility. For additional information about connecting ADAM modules and IA relay boards, please refer to your unit's installation guide.

NOTE: None of these devices – sensors, activators, ADAM module, or IA relay board – are supplied with the Video Gateway.

The Video Gateway can be configured to perform any or all of the following actions when a sensor detects an event or an activator is activated:

- Record a camera's video stream (see *Video Recording Settings*, page 96)
- Upload video of the event to an FTP server on the internet (see *Automatically Uploading Video to an AVV Server*, page 64). If e-mail notification recipients are defined in the **SMS and E-mail** screen, an e-mail message is sent to all the recipients when the event begins and a second e-mail is sent when the video is successfully uploaded and is available for downloading by users. The e-mail notification includes a link to the video file on the server and a picture of the event.
- Send Sensor event notifications to the SMS and/or e-mail recipients defined for the system (see *SMS and E-mail Notifications*, page 58). E-mail notifications can optionally include a picture of the event, and, if AVV is activated, a link to video of the event.
- Turn an activator on or off (sensor events only)
- Move any PTZ camera connected to the Video Gateway that supports presets to a preset location (sensor events only)
- Switch to a different outline
- Change the display on a CCTV monitor

These actions can be performed when a sensor becomes active and/or when it becomes inactive. For example, you can configure a sensor such that an SMS notification is sent and an alarm is turned on when it is activated, and the alarm is turned off but no notification is sent when the sensor becomes inactive.

Configuring Sensors and Activators

The **Sensor Summary** screen summarizes the current settings of each sensor and activator in the system, and provides links to the sensor and activator configuration screens, in which these settings can be modified.

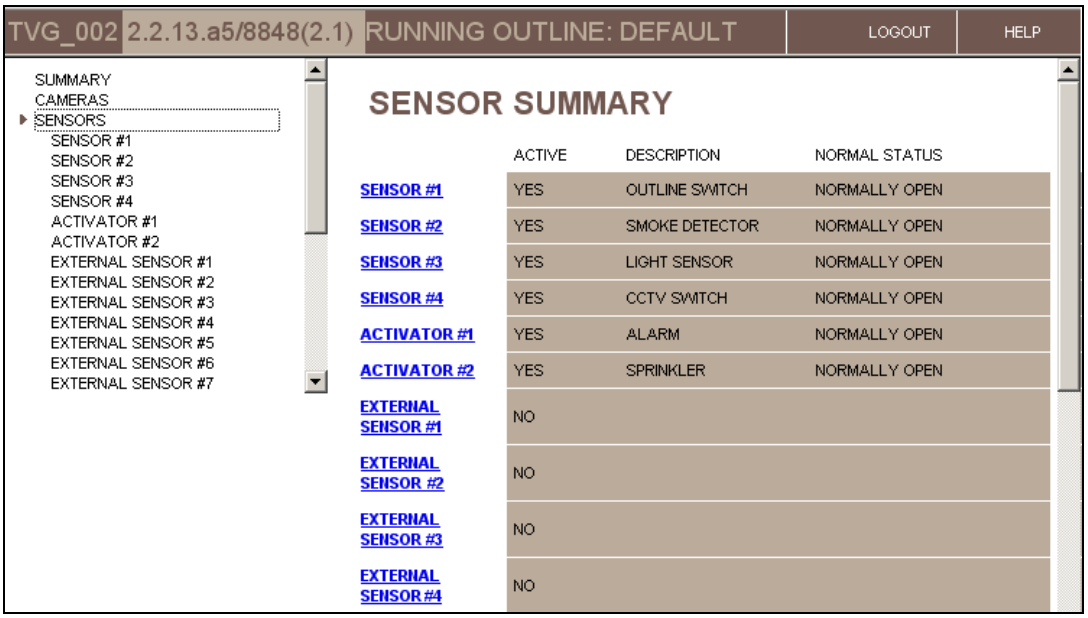


Figure 125: Sensor Summary screen

Each sensor and activator in the system is configured in its own configuration screen. The configuration screens are accessed from the **Sensor Summary** screen. Sensors connected to the unit through an ADAM module appear as "External Sensors." They are configured in the same way as sensors connected directly to the unit.

NOTE: External sensors can only be enabled and configured if **ADAM Sensors** is enabled in the **General System Settings** screen (see *Configuring General System Settings*, page 21).

To open the Sensor Summary screen:

- In the **Main Menu**, click **Sensors**.

To configure a sensor or activator:

1. In the **Main Menu**, under **Sensors**, click the sensor or activator (e.g., **Sensor #1** to configure the sensor plugged into **In1**). The relevant **Sensor** or **Activator** configuration screen opens:

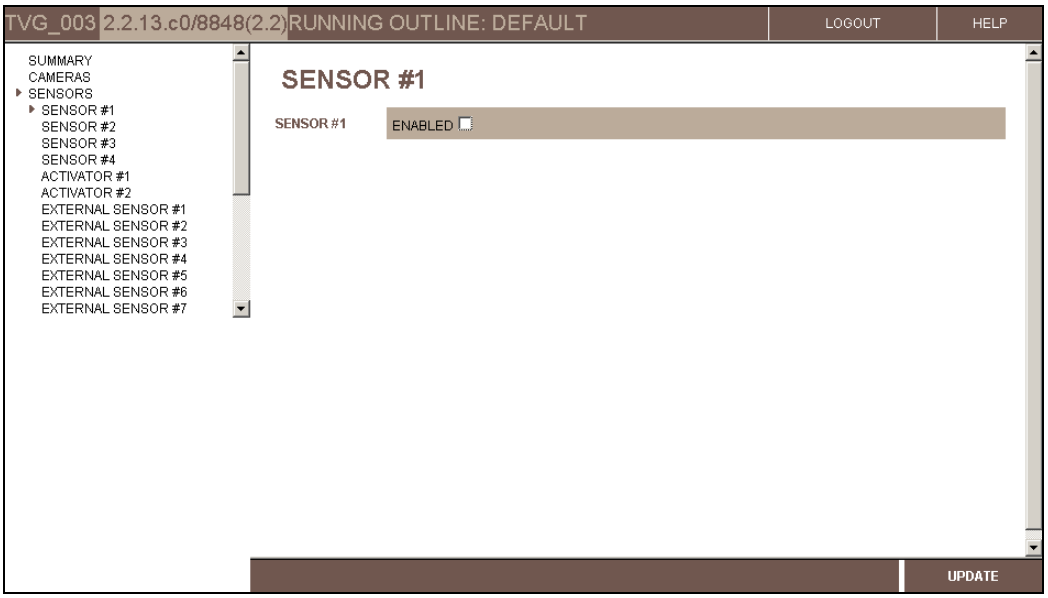


Figure 126: Sensor configuration screen

2. Select the **Enabled** checkbox. The fields required to configure the sensor or activator settings are added to the screen.

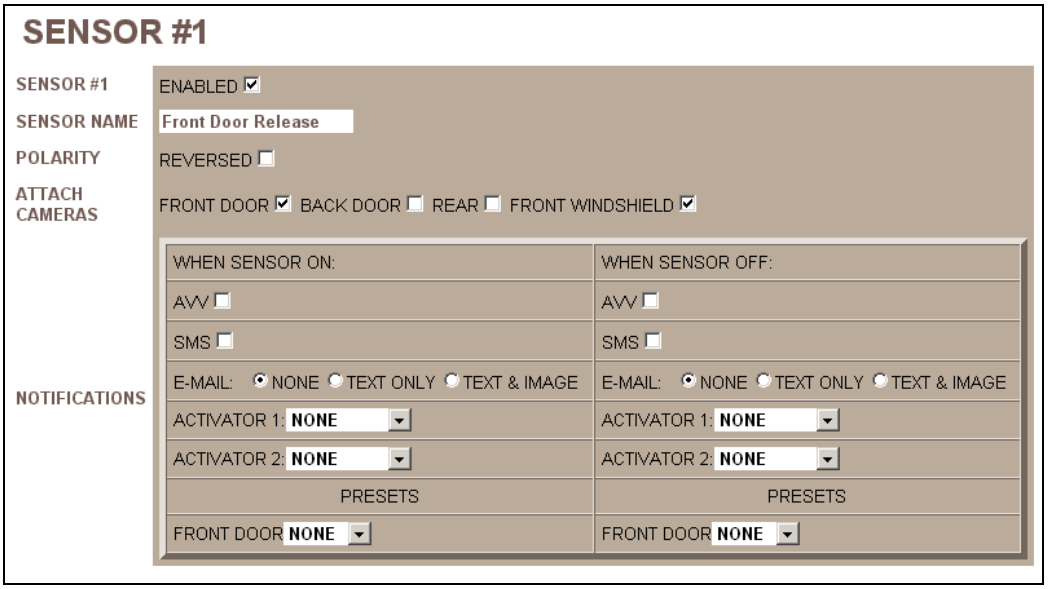


Figure 127: Sensor enabled

Note: If **Enabled** is not selected, the sensor cannot function as an event trigger and will not appear in client applications.

Note: If a sensor is not physically connected to the Video Gateway but is enabled in the **Sensor** screen, false alarms may be generated.

3. Fill in the fields as follows:

Field	Description
Sensor Name / Activator Name	Assign a name to the device (up to 20 characters). Each device must have a different name. The names are used when you view the video via a remote client such as the MultiClient and in e-mail and SMS notifications.

Field	Description
Polarity (Sensors only)	Select **Reverse** if the normal, inactive state of the sensor is *closed* – if it is activated from on to off. **Note:** Sensors are either designed to activate from "off to on" (normally open, or standard polarity) or from "on to off" (normally closed, or "reverse polarity") when an event occurs. Consult the device's manual to determine its normal state. **Note:** This field is equivalent to the "Normal Status" field for activators.
Normal status (Activators only)	Select the normal, inactive state of the activator. **Note:** Activators are either designed to activate from "off to on" (normally open) or from "on to off" (normally closed) when an event occurs. Consult the device's manual to determine its normal state. **Note:** This field is equivalent to the "Polarity" field for sensors.
Attach cameras	Select the cameras to which the device should be linked, if desired. Selecting a camera has the following effects: • You will be able to configure e-mail notifications of events that were triggered by this device to include images. • If you activate AVV for the device, video of events from each of the selected cameras is uploaded to the AVV server. **Note:** If the camera is configured to record by event, attaching it to a device here does not automatically mean that the device is a trigger that activates recording. The device must be selected as one of the recorder triggers in the camera configuration for this to occur. If it is not selected as a trigger, the Video Gateway may not record the event, and therefore it will not be possible to upload it to the AVV server. For information about defining recorder triggers, see *Configuring Video Recording*, page 96. • Events from the device will appear in the client interface under the selected camera as well as under the device. This makes it possible to play back video of the event by dragging and dropping it into a camera pane in the MultiClient.

4. Under **Notifications**, under **When Sensor On** or **On Activator Activated**, specify the actions that should be performed when the device triggers an event, as follows:

Field	Description
AVV	Select this option to have the Video Gateway send video of the event to an AVV server for downloading. The video is downloaded to the site defined in the **AVV** screen, in the format defined there (see *Automatically Uploading Video to an AVV Server*, page 64) , and e-mail notifications are sent to all e-mail recipients (see *SMS and E-mail Notifications*, page 58). **Note:** Two e-mail notifications are sent – one when the event is first detected, and the other when uploading of the video to the AVV server is completed. Thus, the video clip may not be available yet when you receive the first e-mail notification. **Note:** This feature only works if the device is attached to a camera and recording (either event-triggered or continuous) is activated for the camera (see *Video Recording Settings*, page 96). **Note:** This option only appears if AVV is activated for the Video Gateway (see *Automatically Uploading Video to an AVV Server*, page 64).

Field	Description
SMS	Select this option to have the Video Gateway send SMS notifications when the device triggers an event. Messages are sent to the recipients specified in the **SMS and E-mail** configuration screen in the format defined there (see *SMS and E-mail Notifications*, page 58).
E-mail	Select the desired type of e-mail notification, as follows: • **None:** Do not send e-mail notifications when an event is detected. • **Text only:** When an event is detected, send e-mail notifications. Include a text message in the e-mail, but do not attach any images to the message. • **Text & image:** When an event is detected, send e-mail notifications that include both a text message and a picture of the first frame of the event. If multiple cameras are attached to the device, a separate e-mail is sent for each camera. If no cameras are attached to the device, no e-mails are sent. **Note:** E-mail messages are sent to the recipients specified in the **SMS and E-mail** screen, in the format defined there (see *SMS and E-mail Notifications*, page 58). **Note:** If **AVV** is selected, **Text & image** is automatically selected for this field. A single e-mail containing both the standard notification text and the AVV notification is sent at the beginning of each event. In addition, a text-only e-mail is sent when the file transfer is completed. **Note:** If **AVV** was once selected, and has since been cleared, **Text & image** remains selected for this field until the selection is changed manually. If it is not changed, AVV is not activated, but notifications with snapshots are sent at the beginning of each event.
Activator 1 Activator 2 (Sensors only)	Specify the action that each activator should perform when the sensor triggers an event, as follows: • **Turn on**: Set the activator line to "high." • **Turn off**: Set the activator line to "low." • **None**: Do not change the activator's status. **Note:** These settings are not available for activators. **Note:** The **Activator 2** field only appears for the HVG, MVG, and UVG.
Load Outline (Sensor 1 only)	If Sensor 1 is a toggle switch that will be used to switch outlines, select **Enabled**, and then follow the instructions under *Configuring Sensor 1 to Switch Outlines*, page 115. **Note:** This option only appears if **Outline Switching** is set to **Sensor** in the **General Settings** screen (see page 24) and if more than one outline is enabled in the unit's configuration (see *Defining* Alternate Outlines, page 118).
TV-Out Display Switch (HVG: Sensor 6 only; MVG and UVG: Sensor 4 only; CVG and CVG-M: Sensor 1)	If a push-button switch connected to this sensor connector will be used to change the display on a CCTV monitor connected to the unit, select this option. For additional information, see *Configuring a Sensor to Control CCTV Display*, page 116. **Note:** This option only appears if **Display Switch Via Sensor** is enabled in the **TV-Out** screen (see *Configuring a CCTV Monitor (TV-Out)*, page 28)

Field	Description
Presets (Sensors only)	All PTZ cameras connected to the Video Gateway that support presets are listed below this heading. If you want one of these cameras to automatically aim at a preset location when a sensor event begins, beside the name of the camera, select the number of the preset location. **Note:** Preset locations are defined and assigned numbers using a client application such as the MultiClient. For additional information, please refer to the relevant client application guide.

5. Under **Notifications**, under **When Sensor Off** or **On Activator Deactivated**, specify the actions that should be performed when an event ends, as described above.

6. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Configuring Sensor 1 to Switch Outlines

A toggle switch can be connected to the **In1** connector on the Video Gateway instead of a sensor. The switch can be used to toggle between two outlines. For example, if an MVG is installed in a bus, when the bus is parked in the lot, the "Parked" outline – which activates sensors, notifications, and event-triggered recording – can be loaded. When the bus driver begins driving, he or she can flick the switch to load the "Driving" outline, in which sensors and most notifications are deactivated, and recording is continuous.

NOTE: This feature can only be activated in the **Sensor 1** configuration screen if it is first enabled in the **General System Settings** screen (see *General System Settings*, page 19).

NOTE: In some cases, an alarm panel may be connected to **In1** instead of a toggle switch. In this case, the alarm can perform the same function as the toggle switch –when the alarm is turned on or off, it automatically toggles the active outline as well. For additional information, please refer to the installation guide or consult your vendor.

➪ *To configure Sensor 1 as an outline switch:*

1. In the **Main Menu**, under **Sensors**, click **Sensor 1**. The **Sensor #1** configuration screen opens.

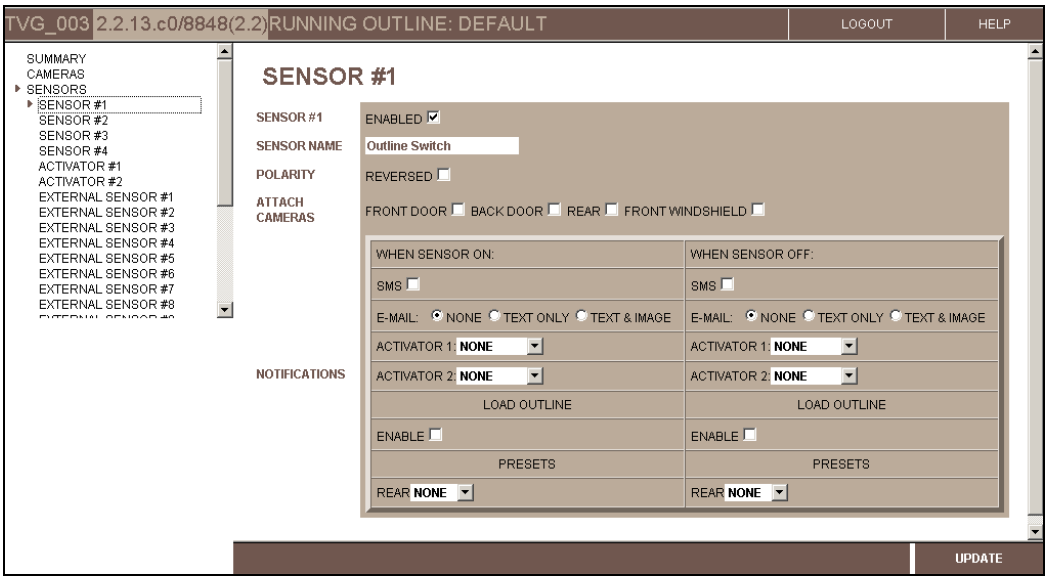


Figure 128: Sensor #1 configuration screen

Note: Every time the outline is switched, a sensor event is triggered. If notification settings are activated, notifications will be triggered each time the display is changed.

2. Under **When Sensor On**, under **Load Outline**, select **Enable**. The **Outline** field is added to the screen.

Figure 129: Outline field

3. In the dropdown list, select the name of the outline you want to load when the toggle switch is turned on.

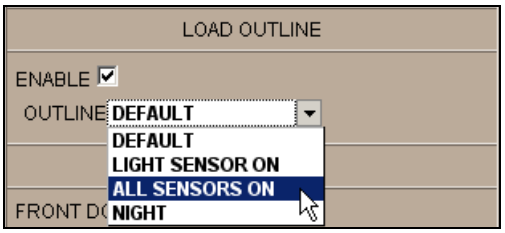


Figure 130: Selecting an outline

4. Under **When Sensor Off**, under **Load Outline**, select the name of the outline you want to load when the switch is turned off, as described in steps 2–3.

5. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Configuring a Sensor to Control CCTV Display

You can use one of the sensor connectors on the Video Gateway unit to connect a push-button switch to the unit. If a monitor is connected to the Video Gateway, the switch can then be used to change the display in the CCTV monitor. With each press of the button, the display cycles to the next display type, in the following order:

- **Split screen:** The screen is divided into four parts, and live video from each camera is displayed in one of the parts.

- **Camera 1:** Full-screen display of live video from Camera 1
- **Camera 2:** Full-screen display of live video from Camera 2
- **Camera 3:** Full-screen display of live video from Camera 3 (HVG, MVG, UVG only)
- **Camera 4:** Full-screen display of live video from Camera 4(HVG, MVG, UVG only)
- **Rotate:** Full-screen display that cycles from one camera to the next. (The rotation delay is defined in the **TV-Out Settings** screen; see *Configuring a CCTV Monitor (TV-Out)*, page 28.)
- **None:** A digital clock is displayed, and no video is displayed.

Only one sensor connector can serve this purpose on each unit. The appropriate sensor connector for each model is:

- **HVG: In6** (Sensor 6)
- **MVG, UVG: In4** (Sensor 4)
- **CVG, CVG-M: In1** (Sensor 1 – the only sensor connector)

NOTE: This feature can only be activated in the relevant **Sensor** configuration screen if it is first enabled in the **TV-Out** screen (see *Configuring a CCTV Monitor (TV-Out)*, page 28).

NOTE: On CVG and CVG-M models, this feature should not be used if the sensor is configured to trigger outline-switching.

To configure a sensor as a CCTV display switch:

1. In the **Main Menu**, under **Sensors**, click the appropriate sensor (see above). The **Sensor** configuration screen opens.

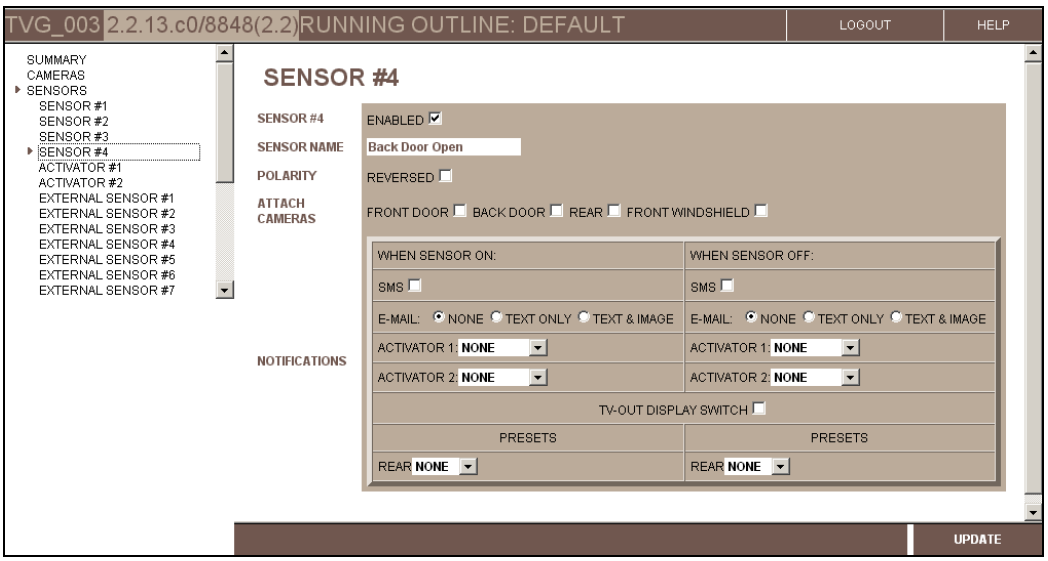


Figure 131: Sensor #4 configuration screen (MVG, UVG)

Note: Every time the CCTV display is switched, a sensor event is triggered. If notification settings are activated, notifications will be triggered each time the display is changed.

2. Select the **TV-Out Display Switch** checkbox.
3. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Defining Alternate Outlines

Outlines define alternate sets of recording and event-handling settings. For example, for the MVG, you could define one set of settings for times when the vehicle is in operation and another set for when it is parked; when the vehicle is in operation, the motion and sensor notifications would be turned off, but when it is parked, they would be turned on.

Outline configuration is an optional feature of the Video Gateway. If you do not define any outlines, all the event-handling settings are automatically stored in the *Default* outline. You do not have to configure the outline settings at all in this case. If you choose to use the Outline feature, you can define up to five additional outlines.

When multiple outlines have been defined, the running outline – the outline whose settings are currently being used by the system – can be switched in one of three ways:

- **Manually:** By selecting the desired outline in the configuration utility, as described below
- **Sensor:** In response to sensor events on Sensor 1 (toggling of a switch connected to **In1**)
- **Schedule:** According to a predefined schedule

The outline-switching alternatives are mutually exclusive; only one of the three switching methods can be active at any given time. The active outline-switching method is selected in the **General Systems Settings** screen (see page 24). For information about using Sensor 1 to trigger outline switching, see *Configuring Sensor and Activator* Settings, page 110. For information about setting up a schedule for outline switching, see *Schedules*, page 73.

NOTE: On CVG and CVG-M models, sensor-triggered outline switching should not be used if the sensor connector (**In1**) is used to control the display on a connected CCTV monitor. For additional information, see *Configuring Sensor and Activator Settings*, page 110; *Configuring a Sensor to Control CCTV Display*, page 116, and refer to the unit's installation guide.

The name of the outline that is currently running is displayed at the top of the screen.

Figure 132: Outline that is currently running

Creating an Outline

In addition to the default outline, you can create up to five additional outlines.

To create a new outline:

1. In the **Main Menu**, click **Outlines**. The **Show Outlines** screen opens.

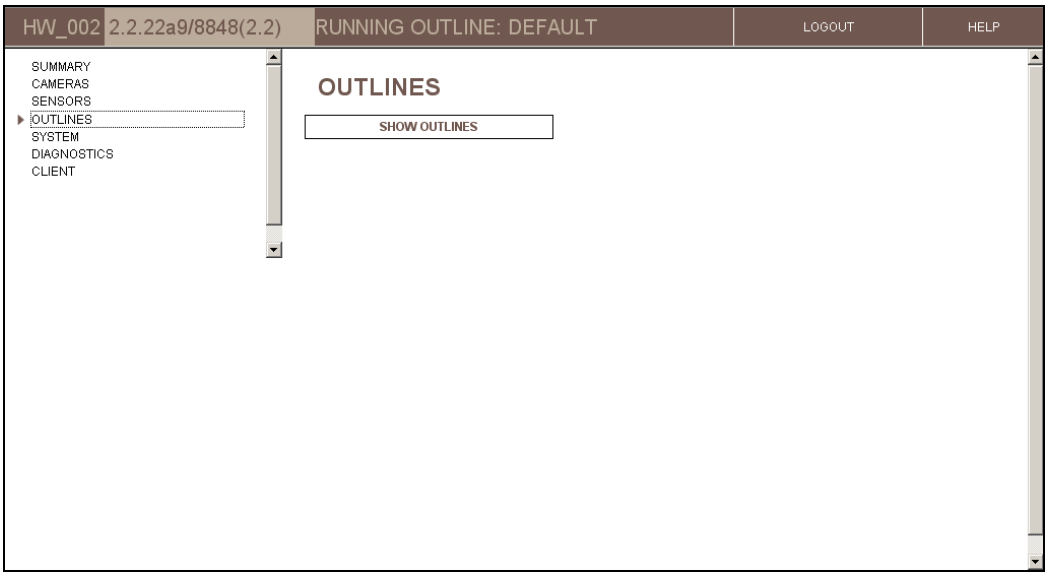


Figure 133: Show Outlines screen

2. Click **Show Outlines**. The **Outlines** screen opens:

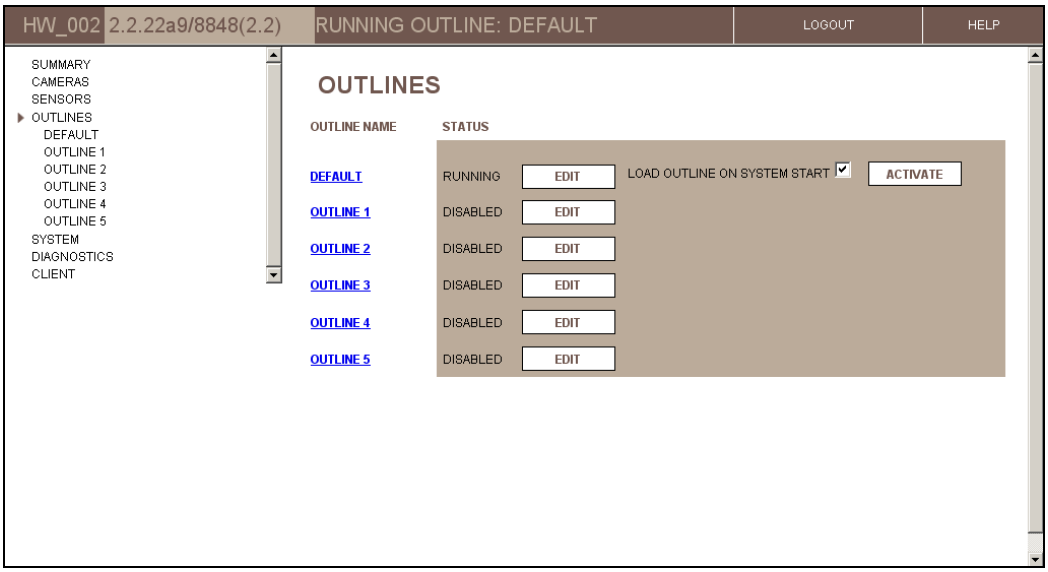


Figure 134: Outlines screen

Note: The **Load Outline on System Start** checkbox and the **Activate** button do not appear if sensor-triggered or scheduled outline switching is activated. The active outline-switching method is selected in the **General Systems Settings** screen (see page 24).

3. In the **Outlines** screen, or in the **Main Menu**, click one of the *Outline* links (e.g., **Outline 1**) The outline's summary screen opens:

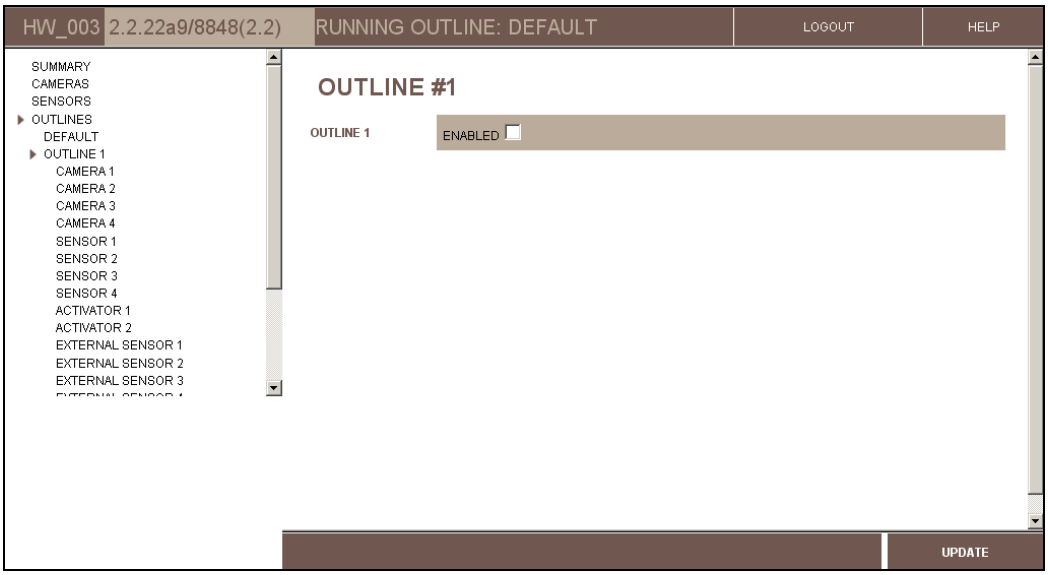


Figure 135: Outline #1 summary screen

4. Select **Enabled**. The outline's initial recording and event-handling settings are displayed:

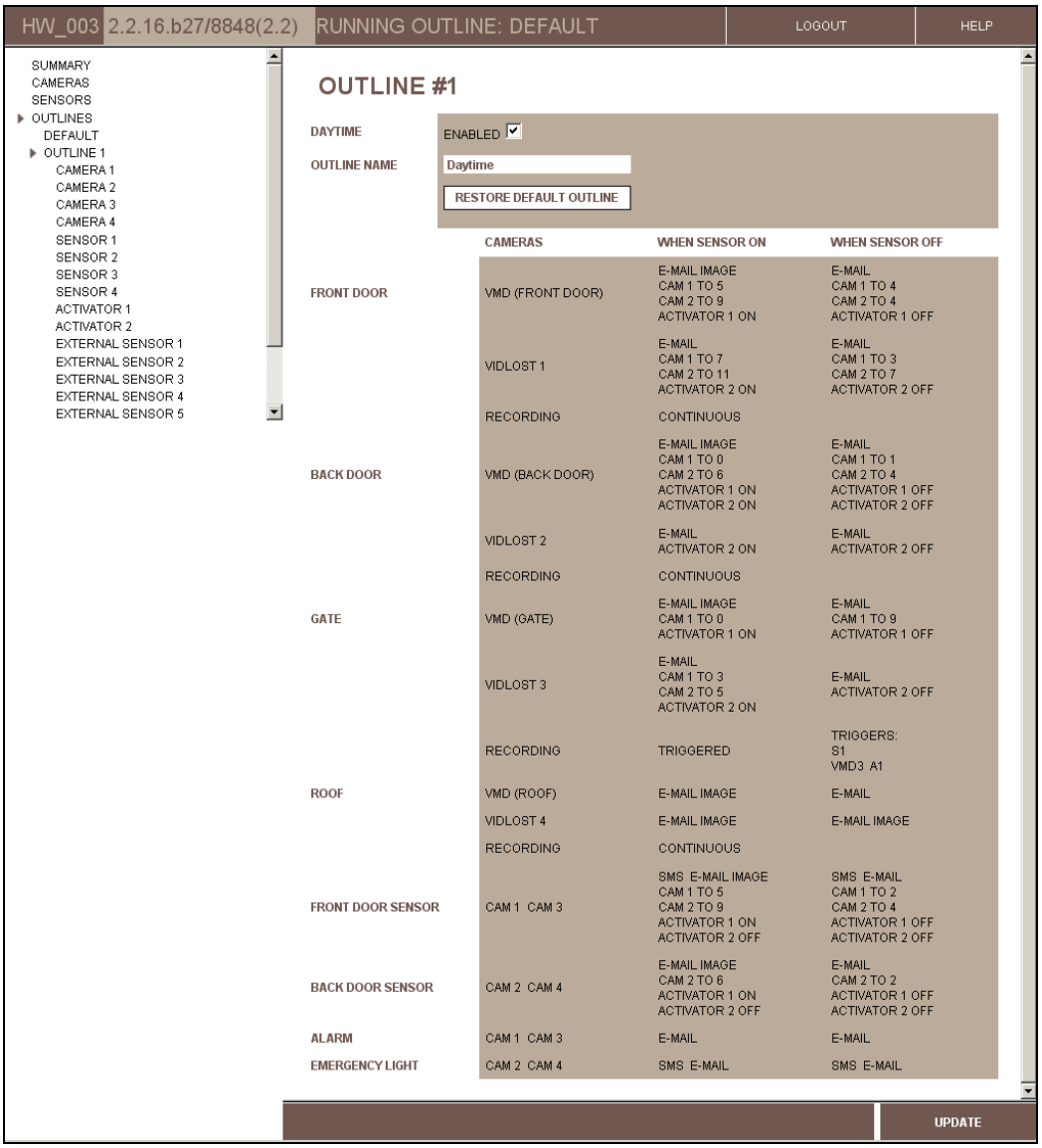


Figure 136: Outline #1 summary screen – enabled

Note: The initial settings of each outline are based on the Default outline.

5. Under **Outline Name**, modify the name of the outline as required, and then click **Update**. The name is updated. The change is fully implemented when the configuration changes are saved and the unit is restarted. (You can save and restart now, and then continue configuring the outline, or wait until you have configured more settings before saving the changes and restarting.)

   Note: If the outline has already been configured, and you want to reset the settings to their defaults (namely, the settings of the Default outline) before you begin reconfiguring them, click **Restore Default Outline**, and then click **Update**.

6. In the **Main Menu**, under the selected outline, click the first device. For example, under **Outline 1**, click **Camera 1**.

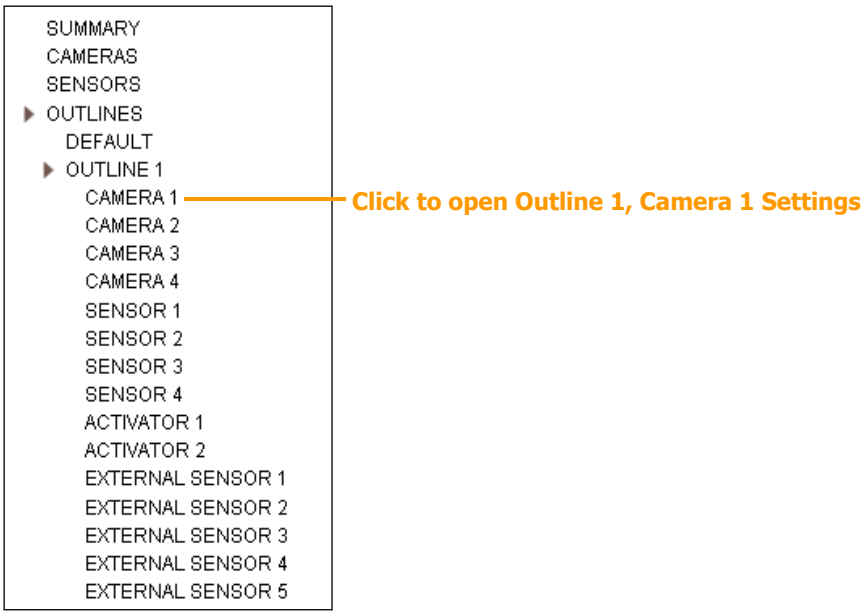


Figure 137: Opening Outline 1, Camera 1 settings in the Main Menu

The configuration screen for the device opens.

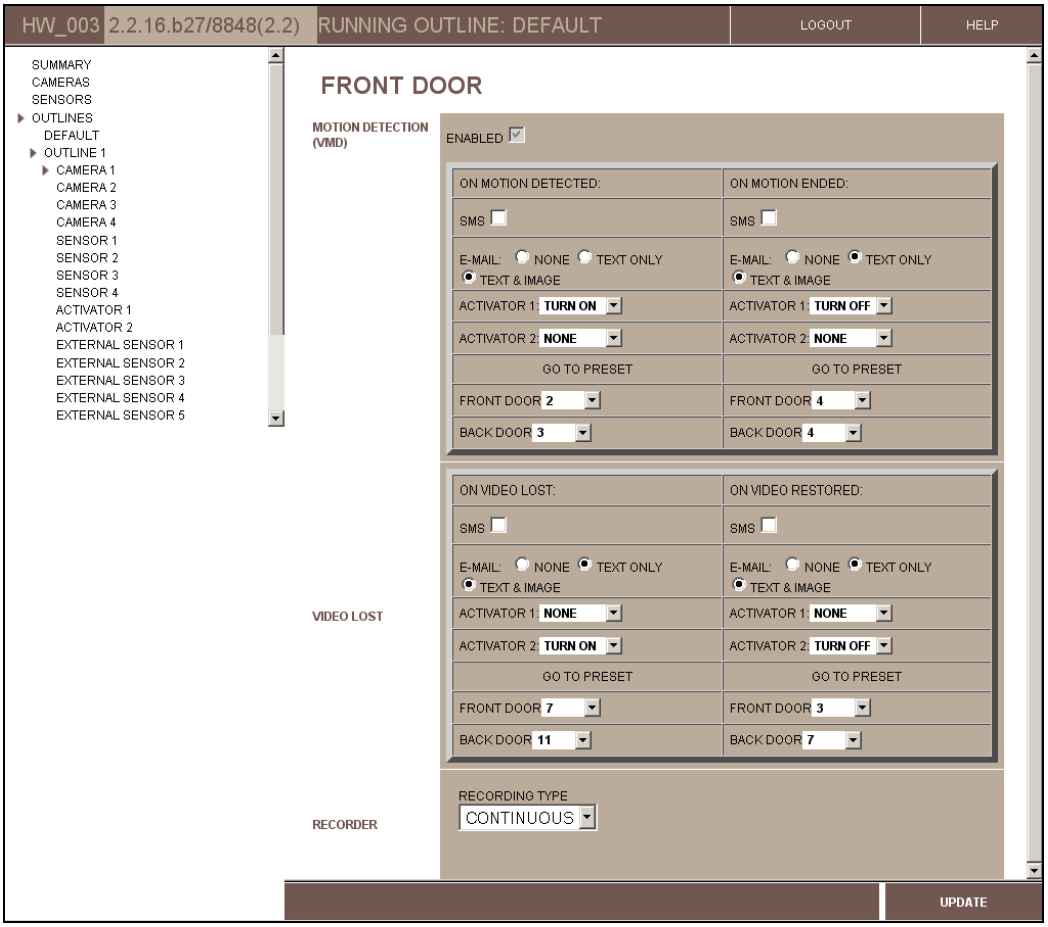


Figure 138: Outline 1, Camera 1 configuration screen

Note: If a device is not enabled in the Default outline, it cannot be enabled in any other outline. In this case, the configuration screen of the device in the outline section will say the device is disabled (see figure 139). For information about activating a device in the Default outline, see page 111.

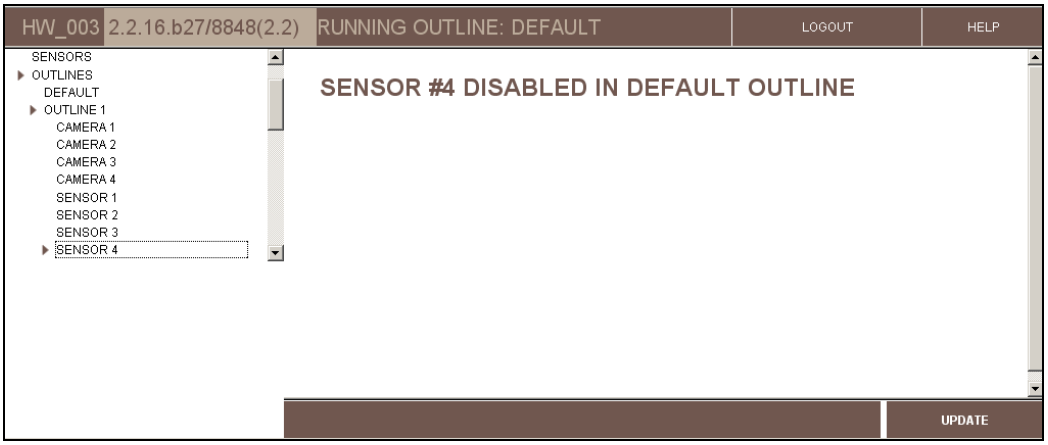


Figure 139: Device that is not enabled in the Default outline

7. Select the desired settings for the device in the current outline.

   Note: For information about the settings, please refer to the section of this manual that relates to each type of setting, as follows:

   - *Video Motion Detection (VMD)*, page 88

     Note: If VMD is enabled for a camera in the default outline, it cannot be disabled in any other outline. Similarly, VMD regions can only be defined and modified in the default outline; they are applied in all outlines in accordance with their definitions in the default outline.

   - *Configuring Video Lost*, page 94
   - *Video Recording Settings*, page 96
   - *Configuring Sensor and Activator* Settings, page 110

     Note: In the **Camera** screens, when recording is *by event*, the sensors and activators can only be selected as triggers if they are already enabled in the current outline. Thus, for example, if you want to select Sensor 1 as a trigger for the Camera 1 recorder, you must first enable Sensor 1 in its configuration screen, and then select it in the Camera 1 configuration screen.

8. Click **Update**.
9. Repeat steps 6–8 for each of the cameras, sensors, and activators connected to the Video Gateway.
10. Save the changes. The settings will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Activating Outlines Manually

If more than one outline is defined, and outline switching is not performed automatically by the system (by means of Sensor 1 or through a schedule), you can manually select the outline you want to run at any time. In addition, you can specify that the selected outline be loaded automatically when the unit first starts up. In this case, the selected outline replaces the *Default* outline as the system default.

To manually switch the running outline:

- In the **Outlines** screen, in the line in which the outline is listed, or in the relevant outline configuration screen, click **Activate**. The selected outline runs immediately. If the **Outlines** screen was not already opened, it opens and displays an updated summary of the outline settings.

  Note: The **Activate** button does not appear if sensor-triggered or scheduled outline switching is activated (see *General System Settings*, page 19).

To select the start-up outline:

1. In the **Outlines** screen, in the line in which the outline is listed, or in the relevant outline configuration screen, select **Load Outline on System Start**.

   Note: The **Load Outline on System Start** checkbox does not appear if sensor-triggered or scheduled outline switching is activated (see *General System Settings*, page 19).

2. Click **Activate** (to the right of the checkbox). The selected outline runs immediately, and is selected as the start-up outline that will be loaded automatically whenever the system starts. If the **Outlines** screen was not already opened, it opens and displays an updated summary of the outline settings.

Saving Configuration Changes

As you make changes in each screen, you click the **Update** button to save the changes. However, in order to complete the save operation and update the Video Gateway, you need to carry out the steps described below. Most configuration changes only take effect after you carry out all of these steps.

NOTE: Changes in the **WiFi** and **Network Priorities**, changes in the **Modem** screen of the MVG and UVG, and modifications to camera brightness, contrast, and saturation settings are implemented immediately when you click the **Update** button. To save them permanently, the changes must be saved, but restarting the unit is not necessary. All other configuration changes are implemented only after they are saved and the system is restarted.

To save all changes:

1. Do one of the following:
   - In the orange *Update Confirmation* (ATTENTION) message below the **Main Menu**, click "Click here to go to Save Settings page."
   - In the **Main Menu**, under **System**, click **Save Settings**.

   The **Save Settings** screen opens:

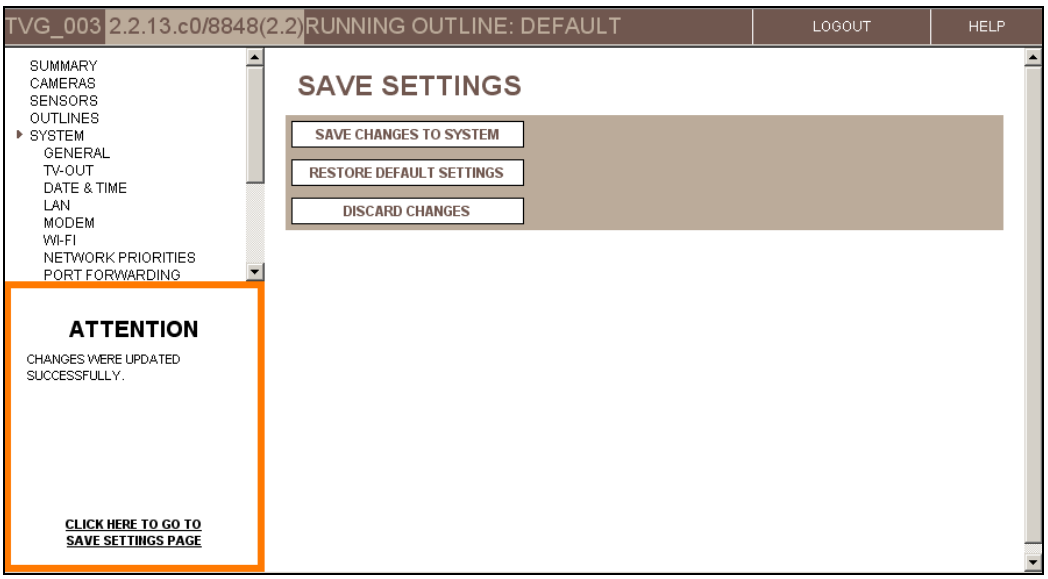


Figure 140: Save Settings screen

2. In the **Save Settings** screen, click **Save Changes to System**. The unit stores the changes permanently, and the **System Restart Page** screen opens:

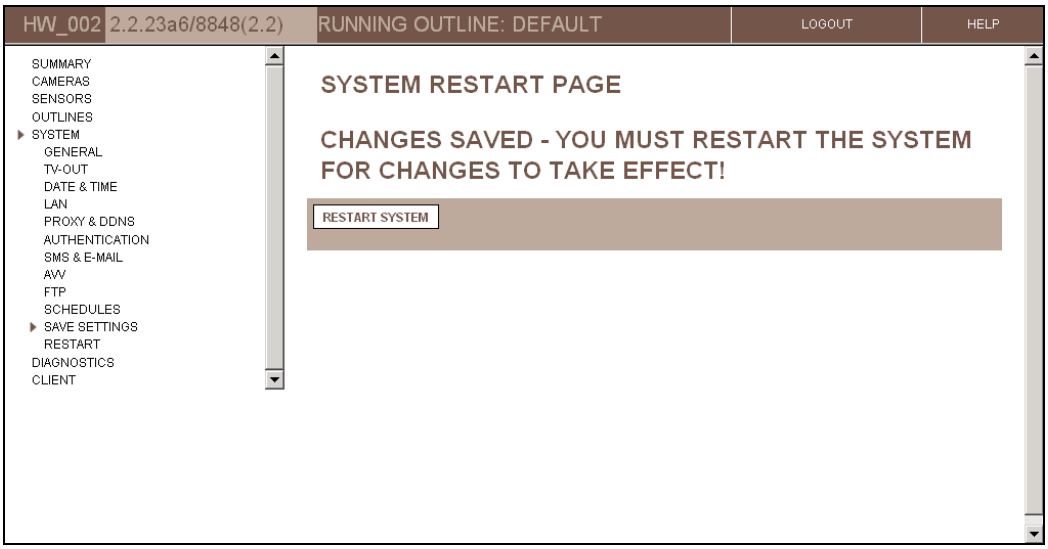


Figure 141: System Restart page (HVG, CVG, CVG-M)

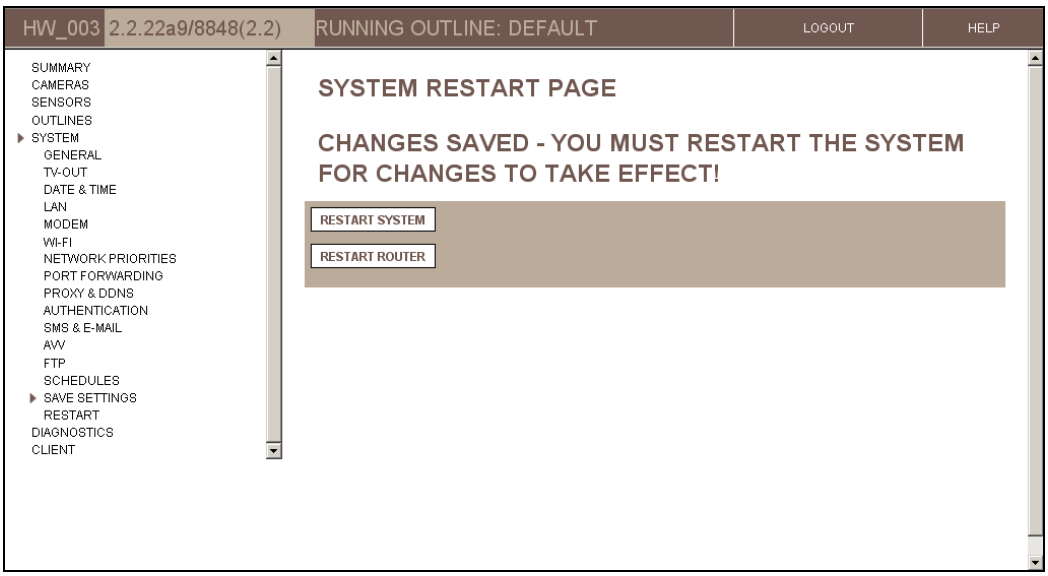


Figure 142: System Restart Page screen (MVG, UVG)

Note: The **System Restart** page of MVG and UVG units, which have built-in SerVision routers, contains a **Restart Router** button. For information about this button, see *Resetting the Unit*, page 161.

3. Click **Restart System**. The unit restarts, and the changes are implemented. You are automatically logged out of the configuration utility, and a confirmation message appears:

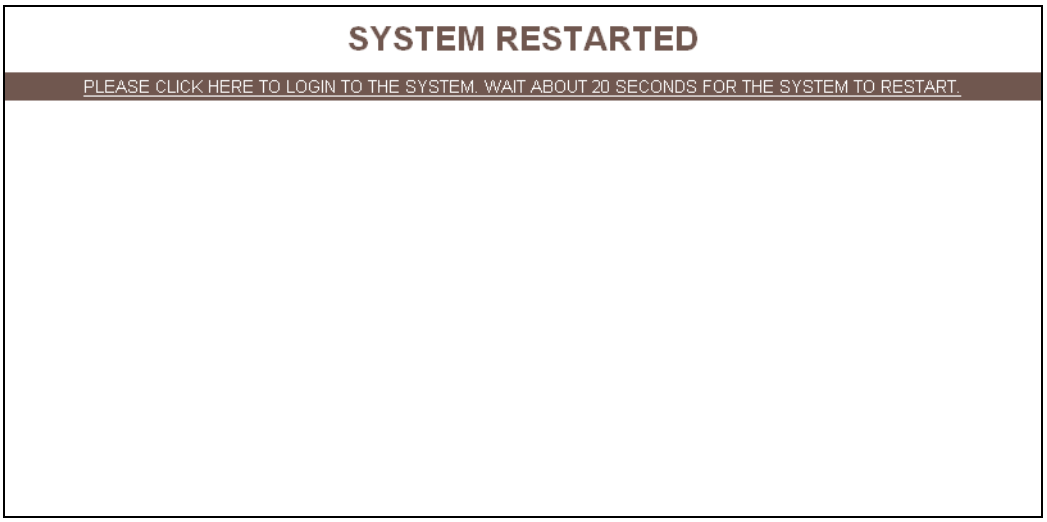


Figure 143: Restart confirmation message

Note: To continue configuring the unit, click the link and log into the configuration utility again.

Note: If you do not restart the unit at this time, most changes are not implemented on the unit, but they are saved on it. The next time the unit is reset, the changes are implemented.

Discarding Changes

Once you have saved a change to the unit's settings in the configuration utility, the change is stored on the unit. When the unit is next restarted, the change is implemented. If the unit has not yet been restarted, you can choose to cancel all configuration changes that were not yet implemented. If you choose this option, changes that have not yet been implemented are erased from the unit, and are not implemented when the unit restarts.

To discard all configuration changes that were saved but were not yet implemented:

1. In the **Main Menu**, under **System**, click **Save Settings**. The **Save Settings** screen opens.
2. In the **Save Settings** screen, click **Discard Changes**. The changes are canceled, and the **Changes Discarded** screen opens:

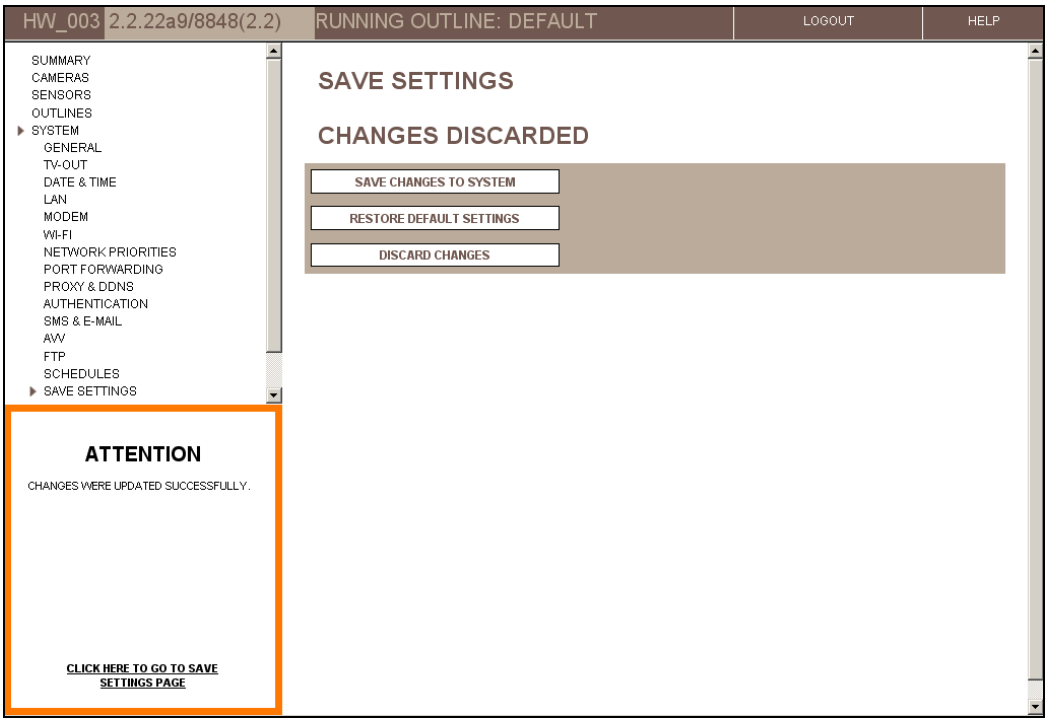


Figure 144: Changes Discarded screen

3. Continue configuring the unit as required.

Restoring Default Settings

If the unit does not function as expected, and you believe this is the result of recent configuration changes, you can choose to restore all of the original factory settings to the unit. You can then configure the unit manually once again, from scratch, as you would if the system was just installed.

NOTE: If recent configuration changes have made it impossible to access the unit at all, even through the local network, the factory settings can be restored as described under *Restoring Factory Settings*, page 162.

To restore the default settings:

1. In the **Main Menu**, under **System**, click **Save Settings**. The **Save Settings** screen opens.
2. In the **Save Settings** screen, click **Restore Default Settings**. The **Confirm Restore** screen opens.

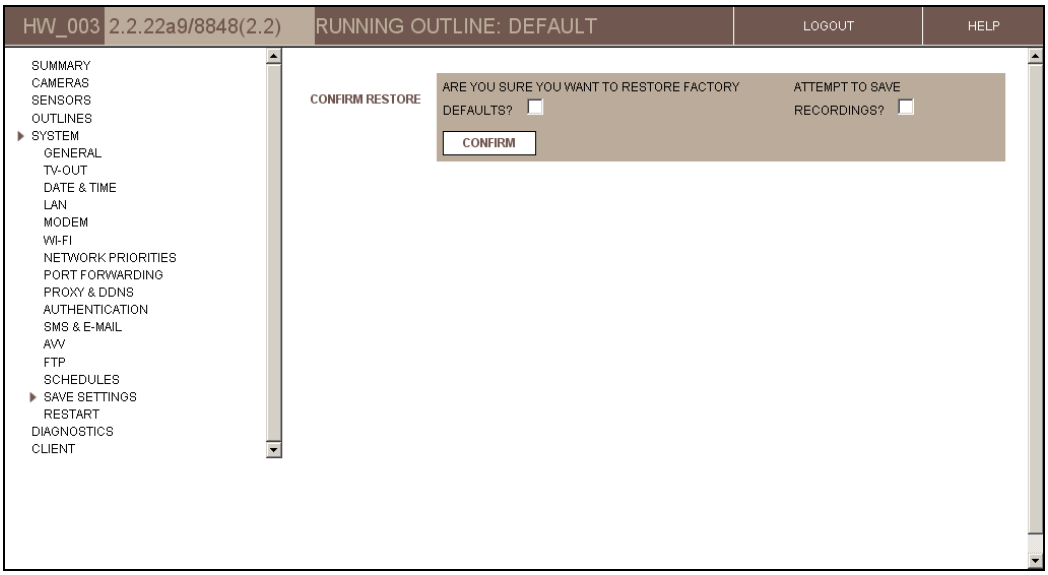


Figure 145: Confirm Restore screen

3. Select **Are you sure you want to restore factory defaults?**.

   Note: If you do not select this option, the unit's settings will not be restored, even if you click **Confirm**.

4. If you want to save all the recorded video that is stored on the unit, select **Attempt To Save Recordings?**. Before restoring the factory settings, the system will attempt to save the recorded video on the storage media. If it succeeds, the video will be available on the unit after the factory settings are restored. The names of the unit and of the cameras recording the video will be lost, however; the cameras will be identified as Camera 1, Camera 2, etc.

   Note: Normally, the video can be saved if two conditions are met: (1) The recordings were all in SIF or CIF resolution. (2) The disk space allotted to each camera for storing video recordings matched the default allotment (see *Advanced Recorder Settings*, page 97).

5. Click **Confirm**. The default factory settings of the unit are restored, and the **System Restart Page** screen opens.

   Note: At the bottom of the **System Restart Page**, the **System Summary** screen appears and displays the settings that the unit will have when it restarts (i.e., the unit's default settings). Make a note of the LAN settings and system name; having this information available will make it easier for you to finding the unit on the network after it restarts.

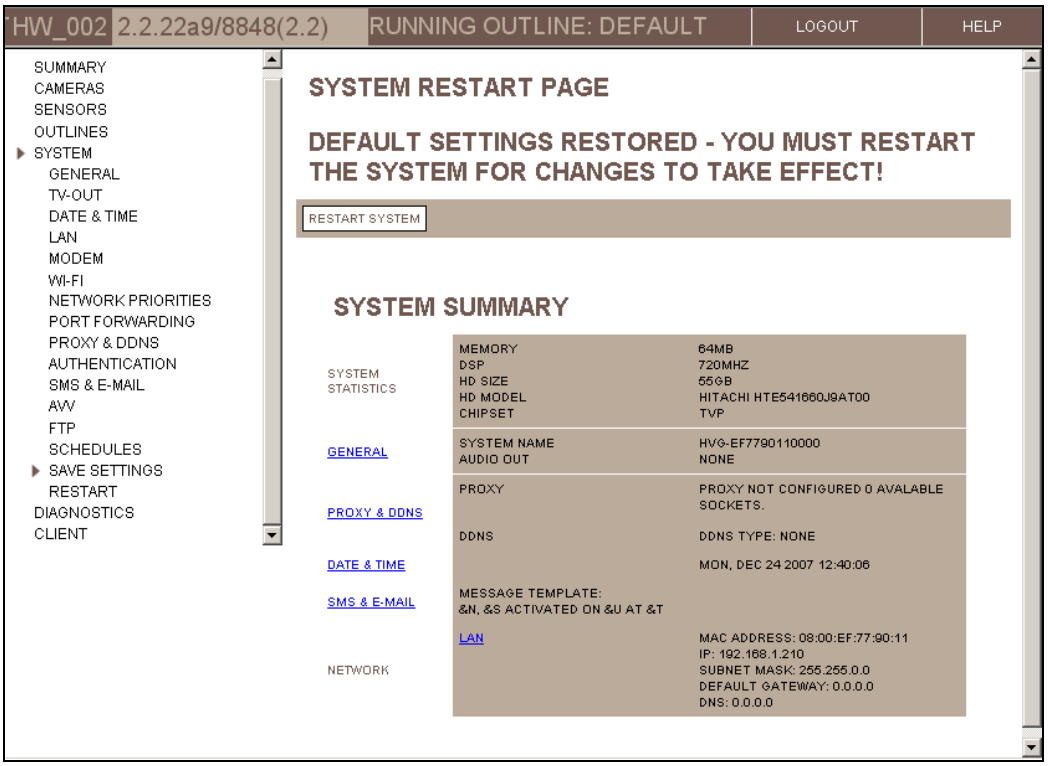


Figure 146: System Restart Page after default settings are restored

6. Click **Restart System**. The unit restarts, and the factory default settings are implemented. You are automatically logged out of the configuration utility, and a confirmation message appears.

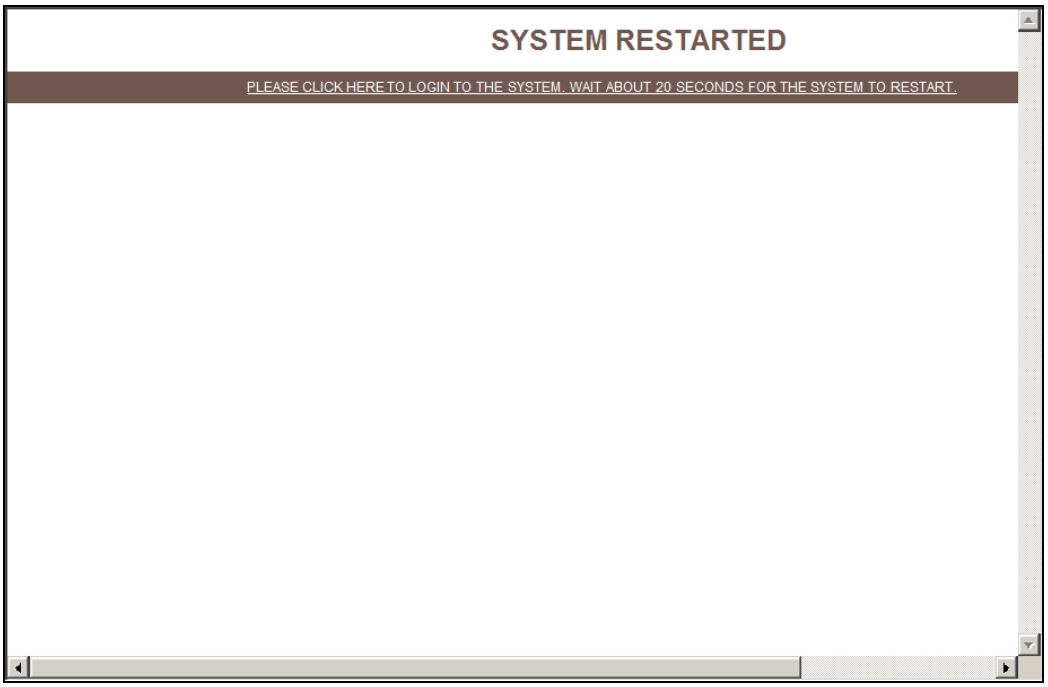


Figure 147: Restart confirmation message

Note: To begin reconfiguring the unit, do one of the following:

- If the primary IP used by the unit before you restored the default settings was the default, factory-configured IP, click the link in the confirmation message to log into the configuration utility and reconfigure it.
- If the primary IP used by the unit before you restored the default settings was different from the default, factory-configured IP, use the MultiClient to search for the unit on the network, and open the unit's configuration utility from the MultiClient (see *Opening the Configuration Utility*, page 9).

Connecting to the Video Gateway

When the system is up and running, you can connect to it in order to access video and other data in a number of ways:

- **Client applications:** For full client features, such as video streaming, event monitoring, and PTZ camera control, you must use one of the SerVision client applications. Applications that run on PCs and on certain cellular telephone and PDA models are available. For additional information, see *About Client Software*, page 6, and refer to the SerVision website (www.servision.net).
- **Configuration utility:** The configuration utility can connect to the Video Gateway as a client in order to display live images from cameras, retrieve event information from the system, and download recorded video to a designated FTP server.

Once the system is installed and configured, you should test it by connecting to it from a PC that is on its local network using the MultiClient client application, as explained in the next section. If this is successful, you can try other methods of connecting: connecting from a remote network using any of the SerVision client applications (please refer to the relevant manual for additional information), or connecting via the configuration utility (see page 134).

Connecting Through the MultiClient

This section explains how to connect to the Video Gateway using the MultiClient from a PC that is either on the same LAN as the Video Gateway or connected to the unit by an Ethernet cross cable. It is recommended that you do this as soon as you have finished installing and configuring the system. If this is successful, you can then install the MultiClient on a remote computer and connect to the Video Gateway via the internet. For complete information about connecting to the MultiClient, locally or remotely, and using the MultiClient to view video, monitor events, and control devices, see the *MultiClient User Guide*.

NOTE: If the MultiClient is not installed on the PC, see *Installing the MultiClient*, page 7.

To connect to the Video Gateway:

1. Open the MultiClient.
2. In the MultiClient, at the bottom of the **Connection Panel**, click the **Search** button.

Figure 148: Search button

The **Find Gateway** dialog box opens, and displays a list of all the SerVision systems connected to the network.

Note: If a Microsoft Windows Security Alert dialog box is displayed, click **Unblock**.

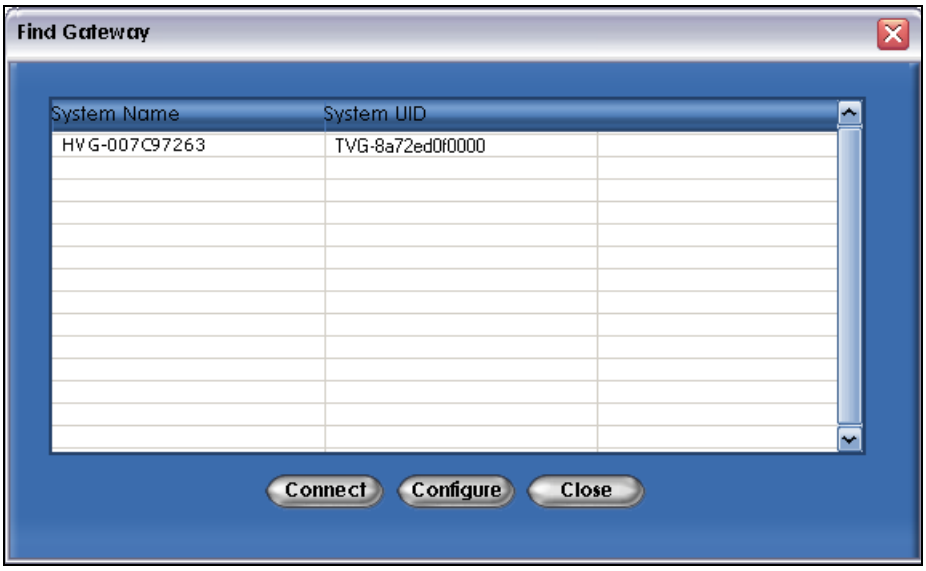


Figure 149: Find Gateway dialog box

3. Select the Video Gateway and then click **Connect**. The MultiClient connects to the Video Gateway, and the Video Gateway appears in the **Connection Panel**.

4. In the **Connection Panel**, expand the system to display all the devices connected to it.

Office Security(Main Floor)
Entrance Hall (103 events)
Back Door (0 events)
Front door (0 events)
Waiting room (0 events)
Balcony door (0 events)
Office door (0 events)
Front alarm (1 events)
Balcony alarm (0 events)

Figure 150: Expanded system

5. Drag a camera from the **Connection Panel** to one of the camera panes in the **Viewing area**. Live video from the camera is displayed in the camera pane.

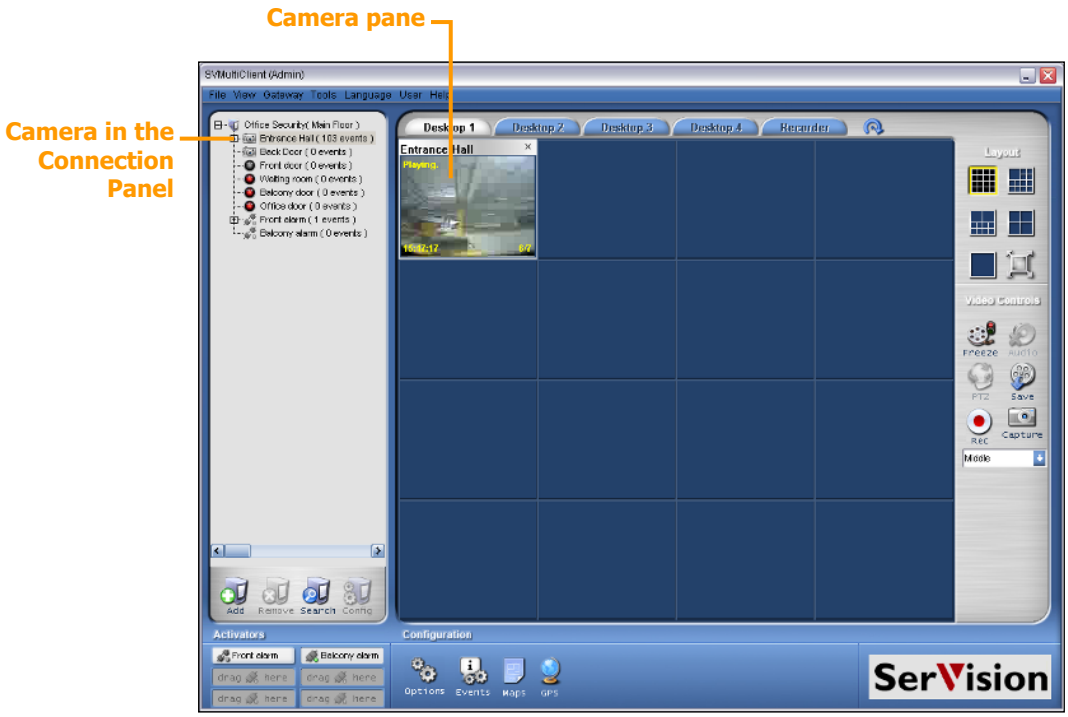


Figure 151: Viewing area

NOTE: The number of video streams (live and/or recorded) that the Video Gateway can supply simultaneously is limited. This limit is based on the system configuration and is due to memory constraints.

Connecting through the Configuration Utility

The configuration utility can connect to the Video Gateway as a client in order to retrieve information about the events that are recorded on the unit and display live snapshots from the cameras. If you have enabled manual downloading of event video to an FTP server (see *FTP Server Settings*, page 71), you can also select events for downloading.

If you log into the configuration utility using a username for which configuration permissions are selected (see *Authentication*, page 57), you will have access to all of these client features as well as all of the other configuration screens. If you log into the configuration utility using a username for which only client access is permitted, you will only be able to access the client features (the **Client** section of the **Main Menu**). In this case, the screen you see when you log in will be the **Events** screen.

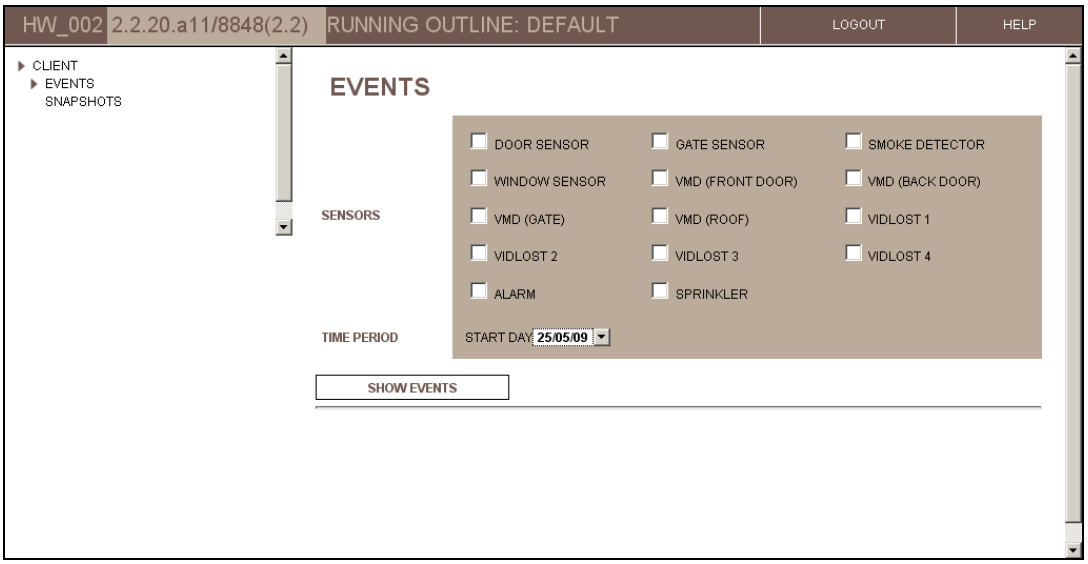


Figure 152: Initial screen when logging in as a client user)

Viewing and Downloading Events

You can view lists of recorded events that are stored on the Video Gateway. If you have configured an FTP server in the **FTP** screen (see *FTP Server Settings*, page 71), you can download video of selected events to the FTP server.

To view lists of events:

1. In the **Main Menu**, click **Client**. The **Events** screen opens:

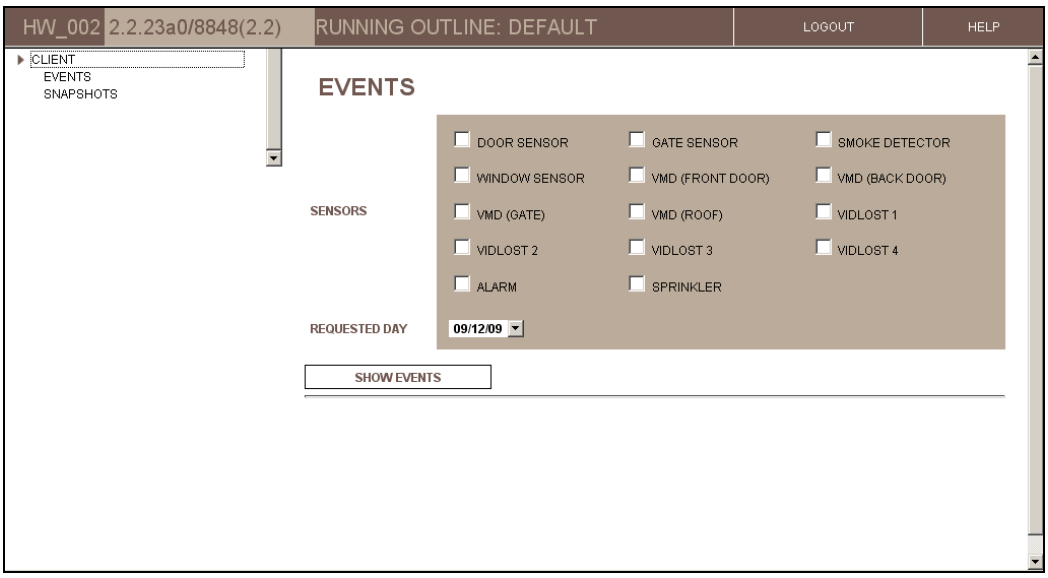


Figure 153: Events screen (HVG)

2. Under **Sensors**, select the sensors for which you would like to see lists of recorded events.
3. Under **Requested Day**, select the day from which you want to see events.

   Note: The dropdown list shows the earliest date from which events are recorded, and every date from that date until the present, regardless of whether recorded events are available from those dates.

4. Click **Show Events**. The events are listed in the lower part of the screen. A separate list is displayed for each sensor.

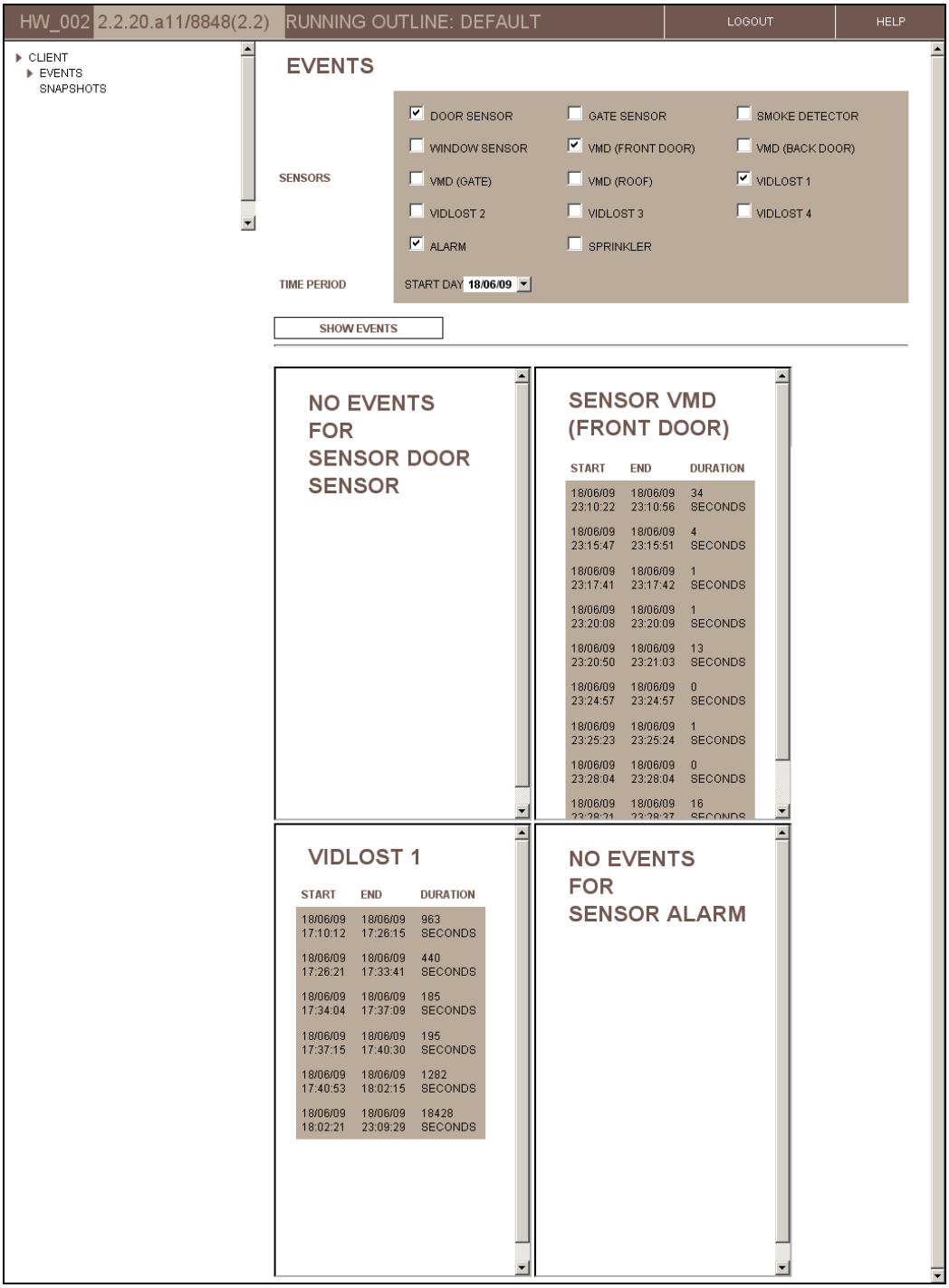


Figure 154: Lists of events

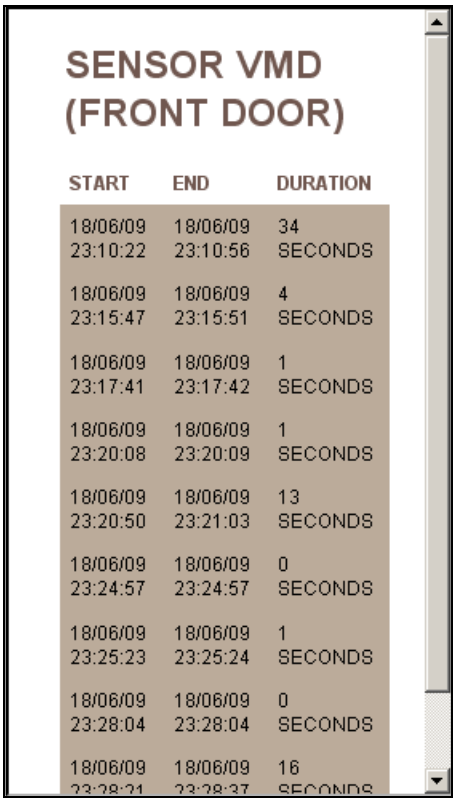


Figure 155: Detail: List of VMD Events

To download an event in the list:

- Click the event. The event is downloaded to the FTP server specified in the **FTP** screen (see *FTP Server Settings*, page 71).

  Note: If no FTP server is defined in the FTP screen (see *FTP Server Settings*, page 71) clicking the events will have no effect.

Viewing Snapshots

You can view live images from the cameras in the configuration utility. This means you can see what is happening on-site wherever you are, as long as you have access to a computer that is connected to the internet – even if you do not have a client device with a SerVision client application available. Video is not supported by this feature, but snapshots can be updated at frequent intervals so that you can receive a continuous flow of images that allows you to clearly see on-site developments as they occur.

Snapshots are transmitted from the Video Gateway to the browser as JPG image files. You can specify the desired image quality during the Snapshot session.

To view snapshots from the cameras in the configuration utility:

- In the **Main Menu**, under **Client**, click **Snapshots**. The **Snapshot Viewer** opens on the right side of the screen.

Figure 156: Snapshot Viewer

When the **Snapshot Viewer** is open, you can change its settings as required. For example, you can select a different camera or specify the refresh rate. You can also refresh the snapshot manually whenever you wish.

To change the Snapshot Viewer settings:

1. In the **Snapshot Viewer**, change the settings as necessary by modifying the fields as follows:

Field	Description
Quality	Modify the snapshot image quality, to any value from 1 through 100. **Note:** The higher the quality, the larger the JPEG image file that is created, and the longer it takes to transfer it to the web browser. A quality setting of 60 is recommended; this settings is equivalent to the quality of the images you receive when viewing a video stream at 10 FPS / 128 kbs.
Camera	Select a different camera from which to view snapshots, if more than one camera is connected to the unit.
Refresh Rate	If you want the snapshot to be updated automatically, specify how often you want the updates to occur, in seconds. **Note:** A refresh rate of "0" means the snapshot is not updated automatically.

2. Click **Change Settings**. The new settings are implemented.

To manually refresh the snapshot:

- Click **Refresh Image**.

System Diagnostics

The configuration utility contains various tools that can be used to monitor system functioning, help solve connection and other system problems, and to schedule routine system maintenance.

The **System Diagnostics** screen displays the current system statistics and contains tools that you can use to test the current connection and e-mail notification settings. Some of these tools, as well as additional system information, can also be accessed from the **Diagnostics** submenu.

NOTE: The use of these tools is only recommended for people with some understanding of computers and networking.

The following system information and diagnostic tools are available:

- **System Statistics:** Provides information about the unit's hardware, firmware, and time settings (see page 140)
- **Ping:** Tests remote connections from the Video Gateway to another device (see page 141)
- **Traceroute:** Traces the path used to connect remotely from the Video Gateway to another device (see page 144)
- **Notifications:** Sends an e-mail message to all of the recipients of e-mail notifications. This option is also available in the **System Summary** screen. For additional information about notifications, see *SMS and E-mail Notifications*, page 58. For information about testing e-mail notifications, see *Testing Notification Settings*, page 64.

  Note: If no recipients are defined for one of the types of notifications, the test button for that type of notification does not appear.
- **Power Log:** Lists every time the Video Gateway resets, and indicates what caused the reset and what type of reset it was; lists the system temperature when the temperature approaches a level that can cause damage to the unit
- **Error Log:** Lists recording errors reported by the Video Gateway. This information may help SerVision technical support staff diagnose problems you are having with your system
- **User Log:** Provides a history of user logins and logouts, including the date, time, and IP address of the device from which the user connected to the Video Gateway.
- **Connections:** Lists various network connections that are in place. This information may help SerVision technical support staff diagnose problems you are having with your system.
- **Maintenance:** Enables you to schedule the system's self-maintenance procedure and, on certain models, to configure the network connection delay (see page 149)

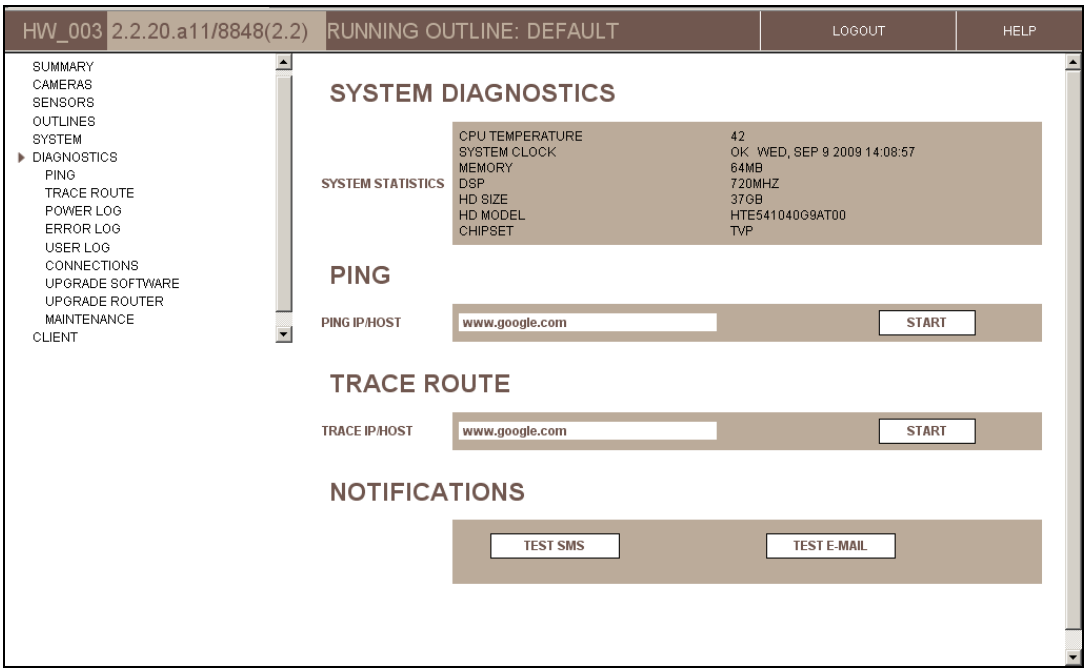


Figure 157: System Diagnostics screen

To open the System Diagnostics screen:

- In the **Main Menu**, click **Diagnostics**.

System Statistics

The **System Diagnostics screen** includes a list of system statistics:

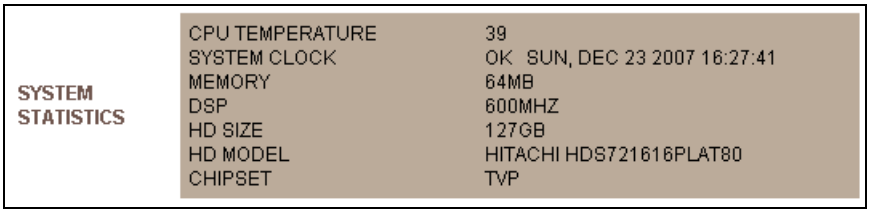


Figure 158: System Statistics

These statistics are explained below:

Statistic	Description
CPU Temperature	The current temperature of the Video Gateway's CPU. If the temperature is too high, it is displayed in red.
System Clock	The status of the system clock; can be one of the following: • OK: Indicates the clock is set and functioning properly. The current date and time appear after the "OK" status. • ERROR: Indicates the clock is either not set or not functioning properly. Try resetting the clock manually (see *Setting the Unit Time*, page 33). If that does not solve the problem, contact technical support.
Memory	The size of the unit's RAM

Statistic	Description
DSP	The speed of the unit's digital signal processor
HD Size	The capacity of the unit's storage media
HD Model	The model number of the unit's storage media
Chipset	The unit's chipset identifier. (This information may be requested by technical support staff if the unit malfunctions.)

Testing Remote Connections

Ping and Traceroute are tools that send simple messages to an IP address to test the connection between the device sending the message and the device with the given IP.

- Ping sends the message and waits for a reply. If a reply is received, you know the device with the given IP is running and can receive and transmit data. Using Ping, you can check whether your Video Gateway unit is running and can be accessed remotely.
- Traceroute sends the message and follows the route it takes from machine to machine in the network to reach its destination. This may help you identify routing problems or firewalls that are interfering with remote connections to your Video Gateway.

NOTE: Some devices are configured not to respond to Ping requests. Therefore, the fact that a device does not respond to a Ping request does not prove unequivocally that the device cannot be accessed remotely. Similarly, since Traceroute makes use of Ping, the information returned by Traceroute may be incomplete.

Both Ping and Traceroute are available from any Windows Command Window. You can use them from Windows to test connections *from the PC* to other devices, such as the Video Gateway. This is useful as an initial diagnostic tool in a situation in which you can connect to the Video Gateway unit for configuration and client access through a PC that is on the same LAN as the unit, but you cannot connect to the unit remotely.

You can run also Ping and Traceroute from the Video Gateway configuration utility to test connections *from the Video Gateway* to other devices, such as SMS / SMTP servers and NTP servers.

Ping

Ping is a tool that sends a simple message to an IP address and waits for a reply. If a reply is received, you know the device with the given IP is running and can receive and transmit data. Ping is available from any Windows Command Window. Using Ping from a remote PC, you can check whether your Video Gateway unit is running and can be accessed remotely. You can also test remote connections from the Video Gateway unit to other devices by running Ping from the configuration utility.

NOTE: Some devices are configured not to respond to Ping requests. Therefore, the fact that a device does not respond to a Ping request does not prove unequivocally that the device cannot be accessed remotely.

To test connections to the Video Gateway unit using Ping from the PC:

1. On the PC, open a Command Window as follows:
   - Open the **Start** menu and click **Run**. A **Run** window opens.

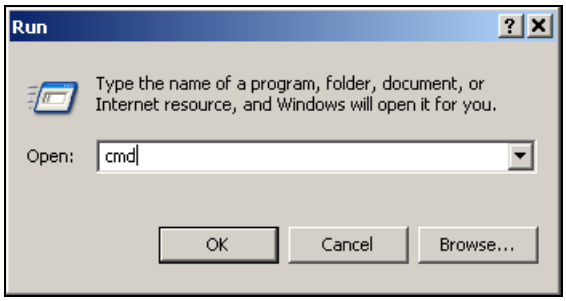


Figure 159: Run window

- In the **Run** window, in the **Open** field, type **cmd**, and then click **OK**. A Command Window opens.

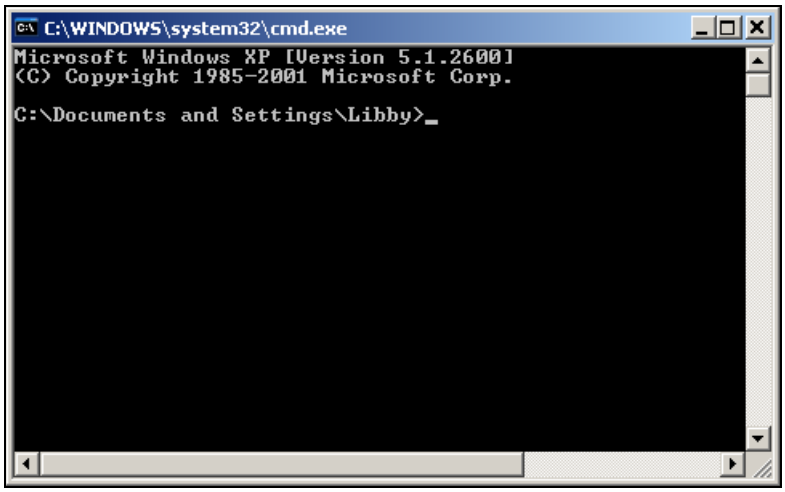


Figure 160: Command Window

2. In the Command Window, type **ping <IP>**, where <IP> is the IP address of the Video Gateway. For example, type

   ping 192.168.3.60

3. Press **Enter**. The PC attempts to *ping* the Video Gateway by sending four test messages to it. The Ping command returns responses from the Video Gateway for each message that was successfully sent, as in figure 161. If a target device does not respond to a message, the Ping command returns a "Request timed out" message, as in figure 162.

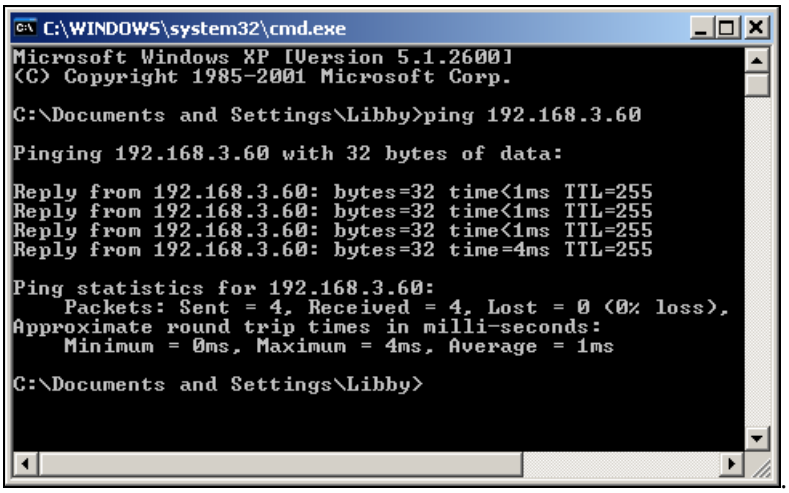

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\Libby>ping 192.168.3.60
Pinging 192.168.3.60 with 32 bytes of data:
Reply from 192.168.3.60: bytes=32 time<1ms TTL=255
Reply from 192.168.3.60: bytes=32 time<1ms TTL=255
Reply from 192.168.3.60: bytes=32 time<1ms TTL=255
Reply from 192.168.3.60: bytes=32 time=4ms TTL=255
Ping statistics for 192.168.3.60:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 4ms, Average = 1ms
C:\Documents and Settings\Libby>

Figure 161: Results of successful Ping

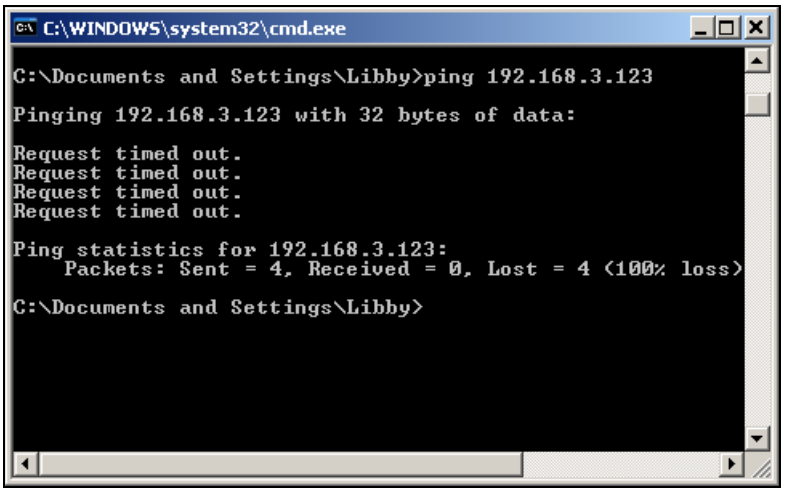

C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Libby>ping 192.168.3.123
Pinging 192.168.3.123 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.3.123:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss)
C:\Documents and Settings\Libby>

Figure 162: Results of failed Ping

To test a remote connection from the Video Gateway unit to a host device using Ping:

1. In the **System Diagnostics** screen, under **Ping**, in the **Ping IP/Host** field, fill in the URL or public IP address of the host device to which the Video Gateway should connect.

Figure 163: Ping request

Note: You can also access Ping from the **Diagnostics** submenu. The functionality is the same regardless of how you access it.

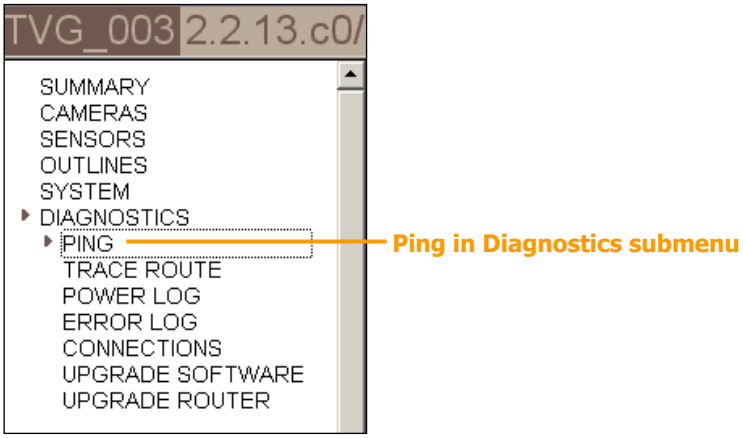


Figure 164: Diagnostics submenu

2. Click **Start**. The response screen opens. If the target device responds, the response, which includes the IP address of the device and a few other statistics, is displayed:

PINGING WWW.GOOGLE.COM (64.233.183.104):
PINGING 64.233.183.147 WITH 32 DATA BYTES
REPLY FROM 64.233.183.147, 32 BYTES, SEQ=1, TTL = 239
REPLY FROM 64.233.183.147, 32 BYTES, SEQ=2, TTL = 239
REPLY FROM 64.233.183.147, 32 BYTES, SEQ=3, TTL = 239
REPLY FROM 64.233.183.147, 32 BYTES, SEQ=4, TTL = 239
REPLY FROM 64.233.183.147, 32 BYTES, SEQ=5, TTL = 239

Figure 165: Ping with response from remote device

If the target device does not respond, an error code is displayed:

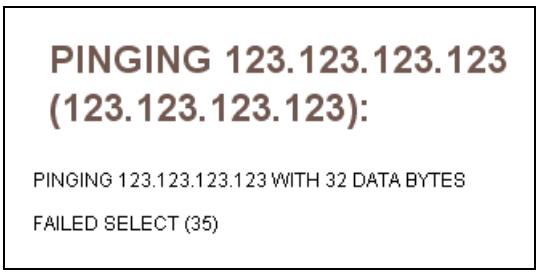


Figure 166: Ping to which the remote device did not respond

Traceroute

Traceroute is a tool that sends a simple message to an IP address and follows the route it takes from machine to machine in the network to reach its destination. This may help you identify routing problems or firewalls that are interfering with remote connections to your Video Gateway. Traceroute is available from any Windows Command Window. Using Traceroute from a remote PC, you can check the route from the PC to your Video Gateway unit. You can also check the routes of remote connections from the Video Gateway unit to other devices by running Traceroute from the configuration utility.

NOTE: Some sites block Ping requests. Since Traceroute makes use of Ping, the information returned by Traceroute may be incomplete.

To check the route from a PC to the Video Gateway unit using Traceroute:

1. On the PC, open a Command Window as follows:
   - Open the **Start** menu and click **Run**. A **Run** window opens.

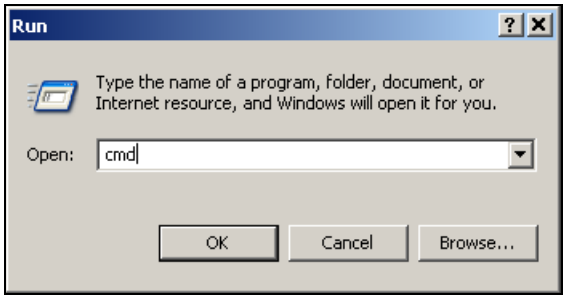


Figure 167: Run window

   - In the **Run** window, in the **Open** field, type **cmd**, and then click **OK**. A Command Window opens.

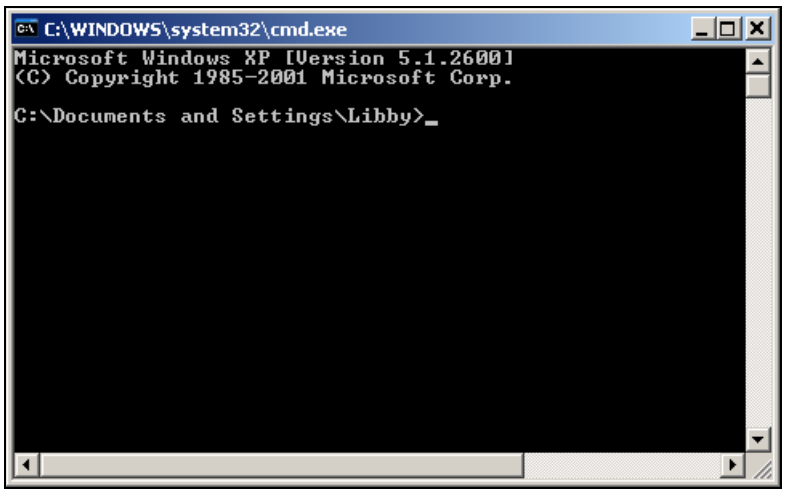


Figure 168: Command Window

2. In the Command Window, type **tracert <IP>**, where <IP> is the IP address of the Video Gateway. For example, type

   tracert 216.10.144.11

3. Press **Enter**. Traceroute sends three packets, and follows their route for up to 30 steps from the sender to the target. For each step in the route, the time it took for each packet to arrive from the previous machine, and the IP of the current machine, are displayed.

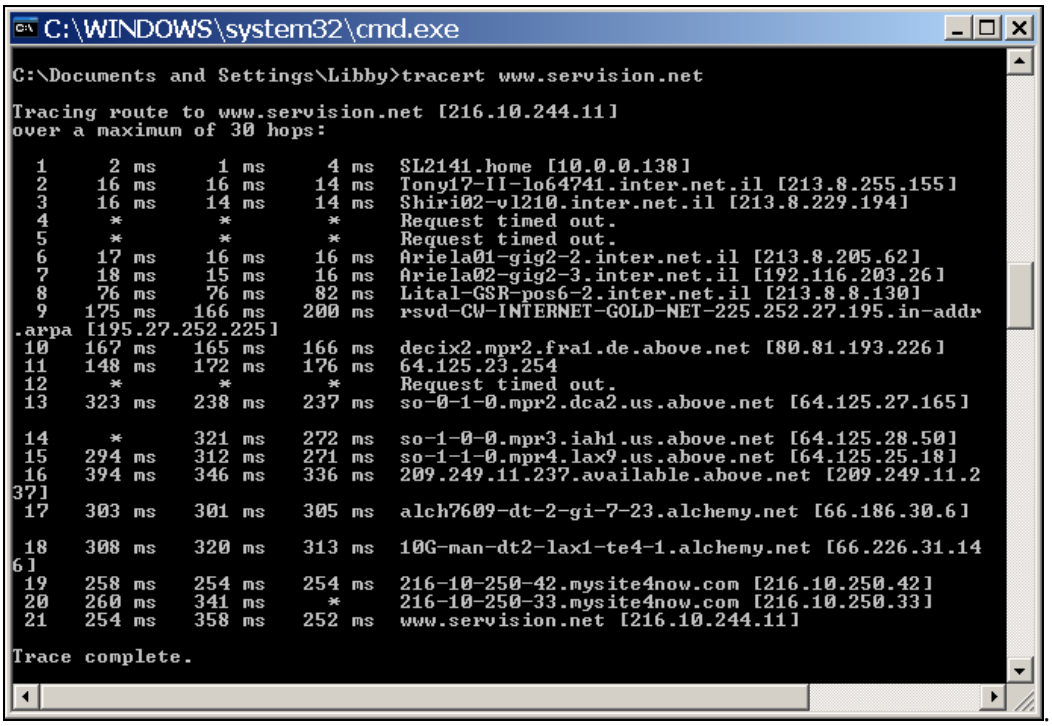

C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Libby>tracert www.servision.net
Tracing route to www.servision.net [216.10.244.11]
over a maximum of 30 hops:
1 2 ms 1 ms 4 ms SL2141.home [10.0.0.138]
2 16 ms 16 ms 14 ms Tony17-II-lo64741.inter.net.il [213.8.255.155]
3 16 ms 14 ms 14 ms Shiri02-vl210.inter.net.il [213.8.229.194]
4 * * * Request timed out.
5 * * * Request timed out.
6 17 ms 16 ms 16 ms Ariela01-gig2-2.inter.net.il [213.8.205.62]
7 18 ms 15 ms 16 ms Ariela02-gig2-3.inter.net.il [192.116.203.26]
8 76 ms 76 ms 82 ms Lital-GSR-pos6-2.inter.net.il [213.8.8.130]
9 175 ms 166 ms 200 ms rsvd-CW-INTERNET-GOLD-NET-225.252.27.195.in-addr
.arpa [195.27.252.225]
10 167 ms 165 ms 166 ms decix2.mpr2.fra1.de.above.net [80.81.193.226]
11 148 ms 172 ms 176 ms 64.125.23.254
12 * * * Request timed out.
13 323 ms 238 ms 237 ms so-0-1-0.mpr2.dca2.us.above.net [64.125.27.165]
14 * 321 ms 272 ms so-1-0-0.mpr3.iah1.us.above.net [64.125.28.50]
15 294 ms 312 ms 271 ms so-1-1-0.mpr4.lax9.us.above.net [64.125.25.18]
16 394 ms 346 ms 336 ms 209.249.11.237.available.above.net [209.249.11.2
37]
17 303 ms 301 ms 305 ms alch7609-dt-2-gi-7-23.alchemy.net [66.186.30.6]
18 308 ms 320 ms 313 ms 10G-man-dt2-lax1-te4-1.alchemy.net [66.226.31.14
6]
19 258 ms 254 ms 254 ms 216-10-250-42.mysite4now.com [216.10.250.42]
20 260 ms 341 ms * 216-10-250-33.mysite4now.com [216.10.250.33]
21 254 ms 358 ms 252 ms www.servision.net [216.10.244.11]
Trace complete.

Figure 169: Results of successful Traceroute

If the target device is not reached after 30 steps, Traceroute times out.

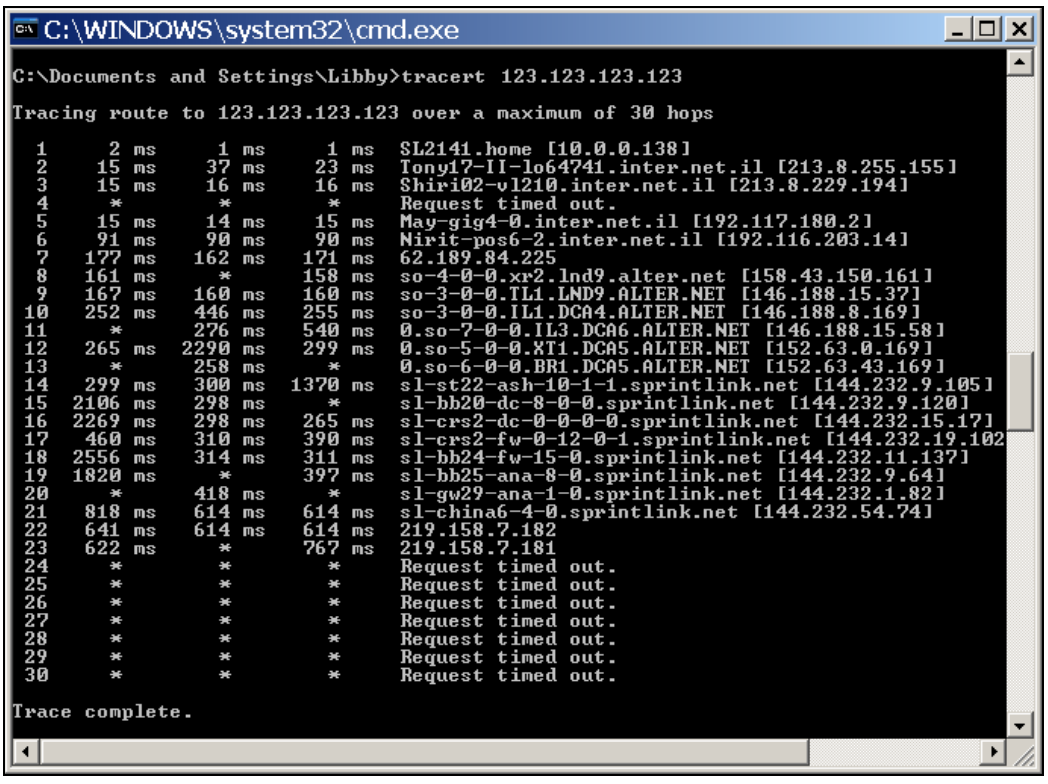

C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Libby>tracert 123.123.123.123
Tracing route to 123.123.123.123 over a maximum of 30 hops
1 2 ms 1 ms 1 ms SL2141.home [10.0.0.138]
2 15 ms 37 ms 23 ms Tony17-II-lo64741.inter.net.il [213.8.255.155]
3 15 ms 16 ms 16 ms Shiri02-vl210.inter.net.il [213.8.229.194]
4 * * * Request timed out.
5 15 ms 14 ms 15 ms May-gig4-0.inter.net.il [192.117.180.2]
6 91 ms 90 ms 90 ms Nirit-pos6-2.inter.net.il [192.116.203.14]
7 177 ms 162 ms 171 ms 62.189.84.225
8 161 ms * 158 ms so-4-0-0.xr2.lnd9.alter.net [158.43.150.161]
9 167 ms 160 ms 160 ms so-3-0-0.TL1.LND9.ALTER.NET [146.188.15.37]
10 252 ms 446 ms 255 ms so-3-0-0.IL1.DCA4.ALTER.NET [146.188.8.169]
11 * 276 ms 540 ms 0.so-7-0-0.IL3.DCA6.ALTER.NET [146.188.15.58]
12 265 ms 2290 ms 299 ms 0.so-5-0-0.XT1.DCA5.ALTER.NET [152.63.0.169]
13 * 258 ms * 0.so-6-0-0.BR1.DCA5.ALTER.NET [152.63.43.169]
14 299 ms 300 ms 1370 ms sl-st22-ash-10-1-1.sprintlink.net [144.232.9.105]
15 2106 ms 298 ms * sl-bb20-dc-8-0-0.sprintlink.net [144.232.9.120]
16 2269 ms 298 ms 265 ms sl-crs2-dc-0-0-0-0.sprintlink.net [144.232.15.17]
17 460 ms 310 ms 390 ms sl-crs2-fw-0-12-0-1.sprintlink.net [144.232.19.102
18 2556 ms 314 ms 311 ms sl-bb24-fw-15-0.sprintlink.net [144.232.11.137]
19 1820 ms * 397 ms sl-bb25-ana-8-0.sprintlink.net [144.232.9.64]
20 * 418 ms * sl-gw29-ana-1-0.sprintlink.net [144.232.1.82]
21 818 ms 614 ms 614 ms sl-china6-4-0.sprintlink.net [144.232.54.74]
22 641 ms 614 ms 614 ms 219.158.7.182
23 622 ms * 767 ms 219.158.7.181
24 * * * Request timed out.
25 * * * Request timed out.
26 * * * Request timed out.
27 * * * Request timed out.
28 * * * Request timed out.
29 * * * Request timed out.
30 * * * Request timed out.
Trace complete.

Figure 170: Traceroute timed out after 30 steps

To trace the route from the Video Gateway unit to a host device using Traceroute:

1. In the **System Diagnostics** screen, under **Traceroute**, in the **Trace IP/Host** field, fill in the URL or public IP address of the host device to which the Video Gateway should connect.

Figure 171: Traceroute request

Note: You can also access Traceroute from the **Diagnostics** submenu. The functionality is the same regardless of how you access it.

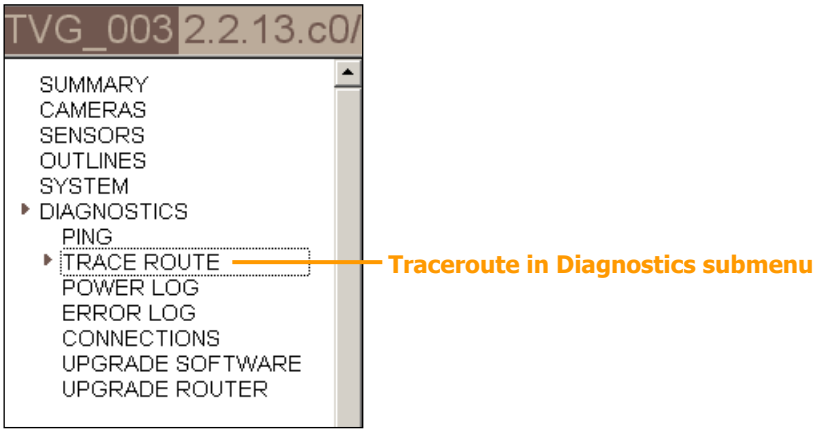


Figure 172: Diagnostics submenu

2. Click **Start**. The response screen opens. Traceroute sends three packets, and follows their route for up to 30 steps from the sender to the target. For each step in the route, the time it took for each packet to arrive from the previous machine, and the IP of the current machine, are displayed.

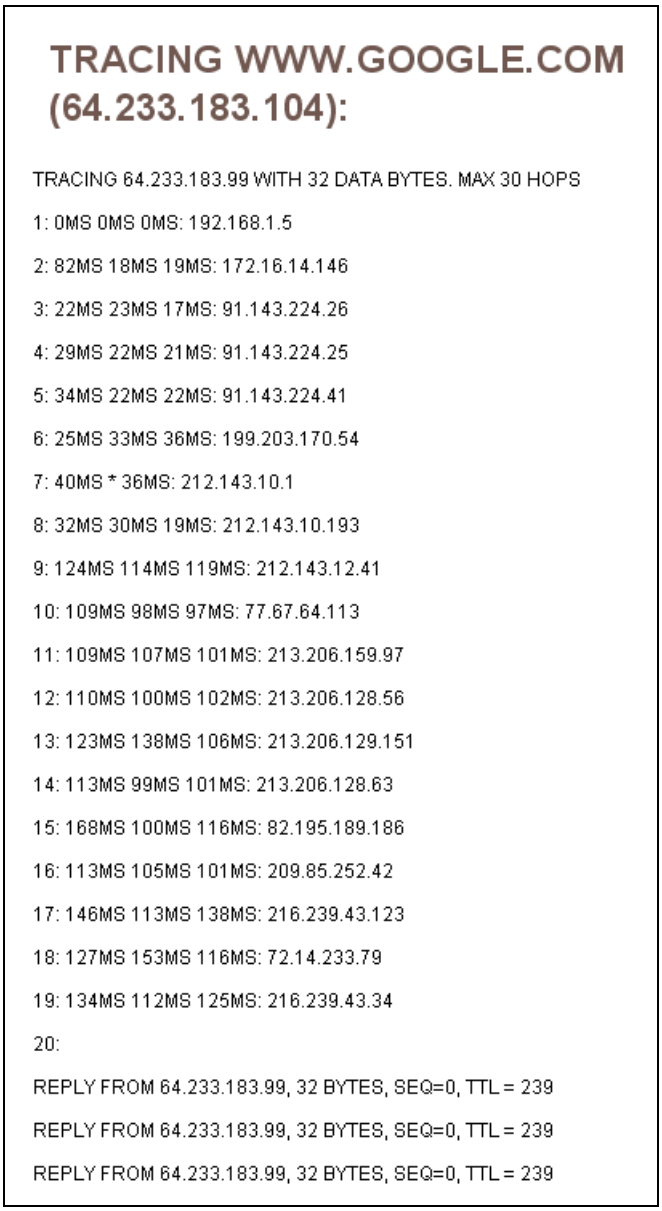


Figure 173: Traceroute results

If the target device is not reached after 30 steps, Traceroute times out.

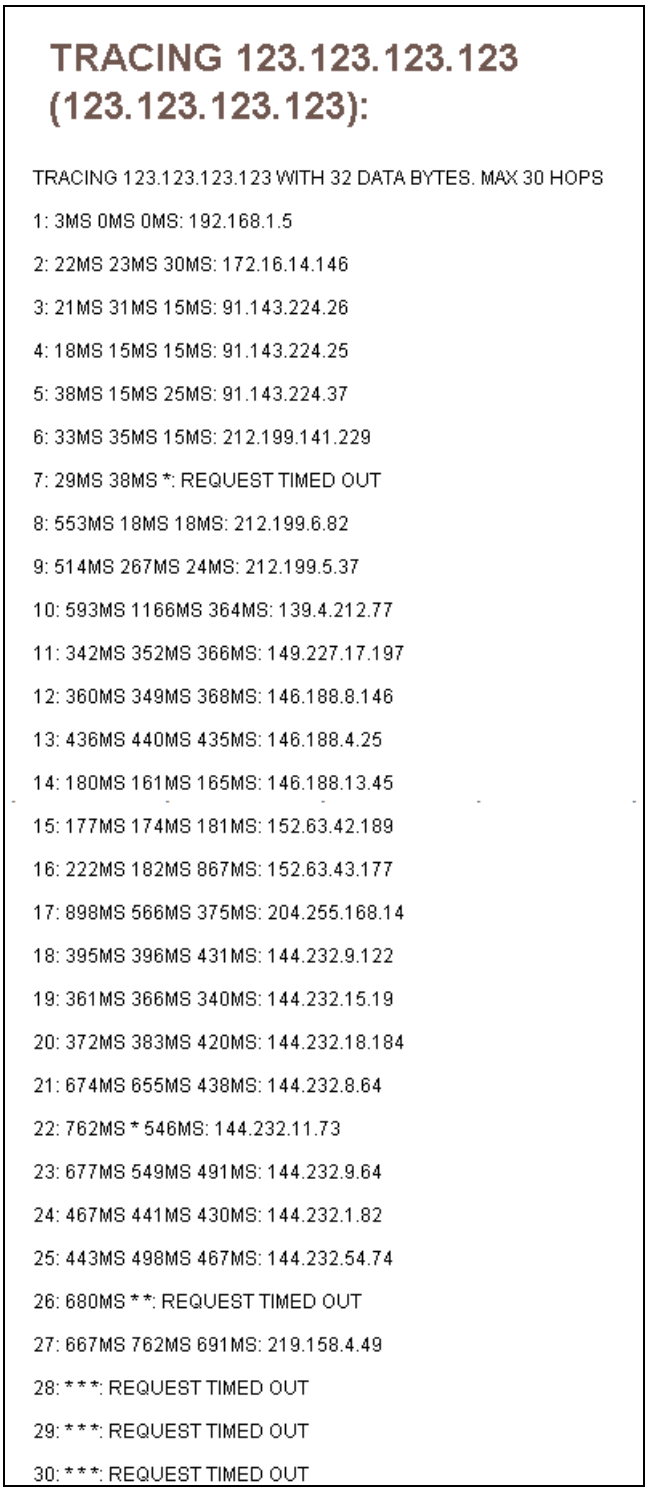


Figure 174: Traceroute timed out after 30 steps

Maintenance

The maintenance screen is used to configure automatic system maintenance. In addition, on some Video Gateway models the screen can be used to set up a network connection delay.

The unit can be configured to periodically perform a routine maintenance procedure. The procedure helps ensure the unit will function optimally over long periods of time. During the maintenance procedure, the system is temporarily unavailable. The procedure takes up to three minutes.

Models without built-in SerVision routers (HVG, CVG, and CVG-M units) can be configured to wait a specified period of time after startup before attempting to connect to the local network. This option is useful in network configurations in which it is desirable to allow time for the local network to get up and running after a power outage or other interruption in network communication before the Video Gateway attempts to connect to the network.

To configure the maintenance options:

1. In the **System Diagnostics** screen, click **Maintenance**. The **Maintenance** screen opens.

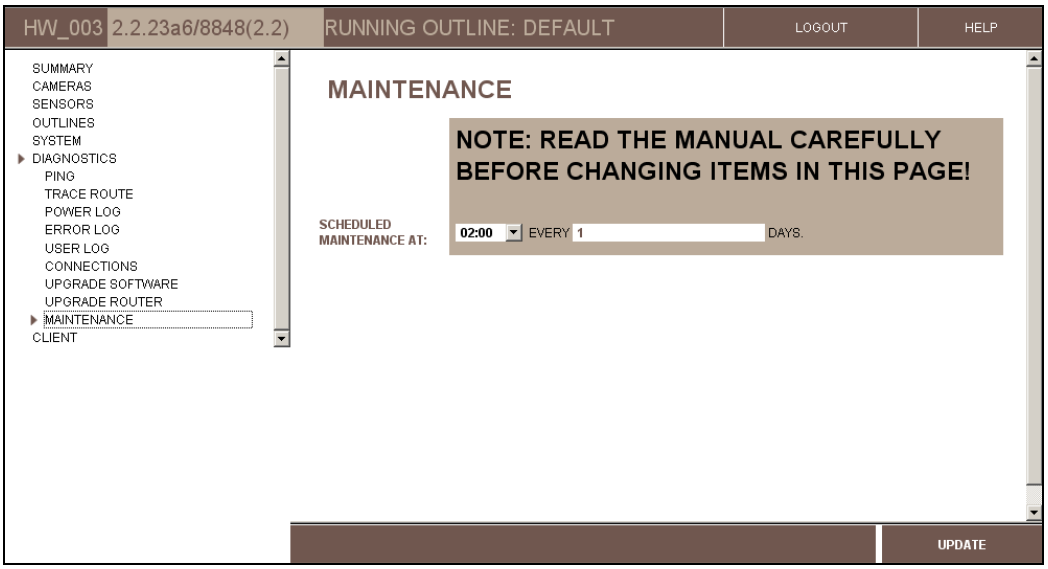


Figure 175: Maintenance screen (MVG, UVG)

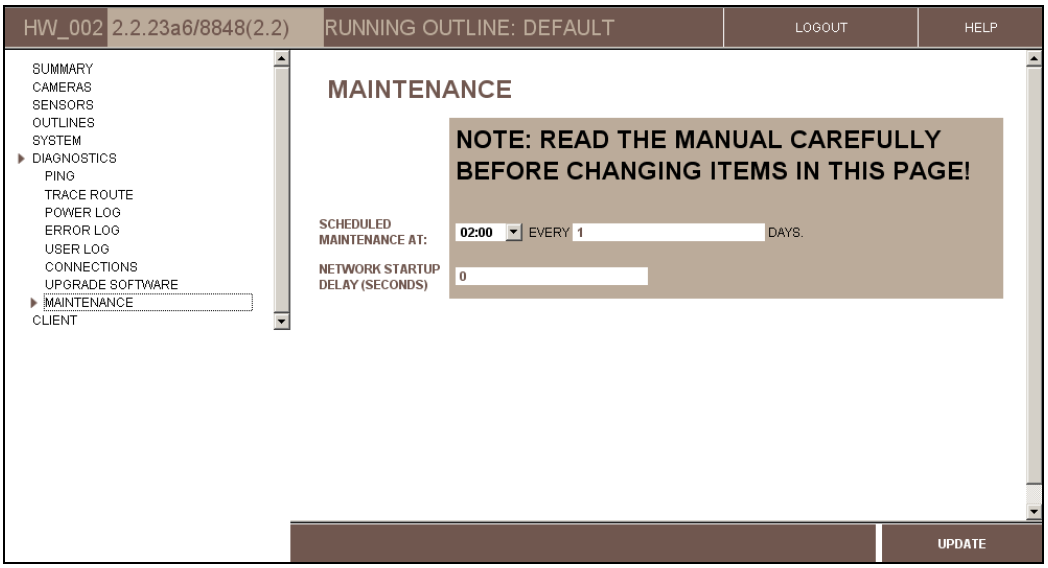


Figure 176: Maintenance screen (HVG, CVG, CVG-M)

2. Under **Scheduled maintenance at**, select the time at which you want the maintenance procedure to run.
3. In the text field between **Every** and **Days**, fill in how often you want the maintenance procedure to take place, in days. If you do not want the maintenance procedure to run at all, type "0."

4. Under **Network Startup Delay**, specify in the number of seconds the unit should wait after it boots up before it attempts to connect to the network. (HVG, CVG, and CVG-M only)

5. Click **Update**, and then save the settings. They will be implemented after the unit is restarted (see *Saving Configuration Changes*, page 125).

Upgrading the Firmware

From time to time, SerVision releases new firmware versions for the Video Gateway. This section explains how to obtain and install new Video Gateway firmware. New firmware can be installed on-site or remotely. It is recommended to install it on-site whenever possible. If your distributor has a **TVG Upload Server** to which you can connect, you can upgrade the firmware using the configuration utility. Otherwise, you must download the firmware from the SerVision website and use the **TVG Download Utility** to download it to the Video Gateway .

NOTE: Upgrading the firmware does not change any of the unit's settings.

CAUTION: If the download process is interrupted in any way before it is completed, or if an incompatible firmware version is loaded, it may be impossible to connect to the unit in the normal way again. Make sure that you know in advance that you are loading the right firmware, and DO NOT INTERRUPT THE DOWNLOAD PROCESS once it is started.

If it nevertheless becomes impossible to connect to the unit after an attempt to upgrade the firmware, the *Catch Boot operation* can be used to reconnect to the unit and download the firmware to it again. See *Catch Boot Operation*, page 156.

SerVision routers have their own firmware, and this firmware may require upgrading from time to time. These routers are built into MVG and UVG units. For information about upgrading the router firmware of these models, see *Upgrading Router Firmware*, page 160.

Upgrading Firmware via a TVG Upload Server

If your distributor has a **TVG Upload Server** to which you can connect, you can upgrade the firmware using the configuration utility. Before you begin, ask your distributor for the IP address or hostname of the server and its port.

To upgrade the Video Gateway firmware from a TVG Upload Server:

1. In the **Main Menu**, click **Diagnostics**, and then click **Upgrade Software**. The **System Upgrade** screen opens:

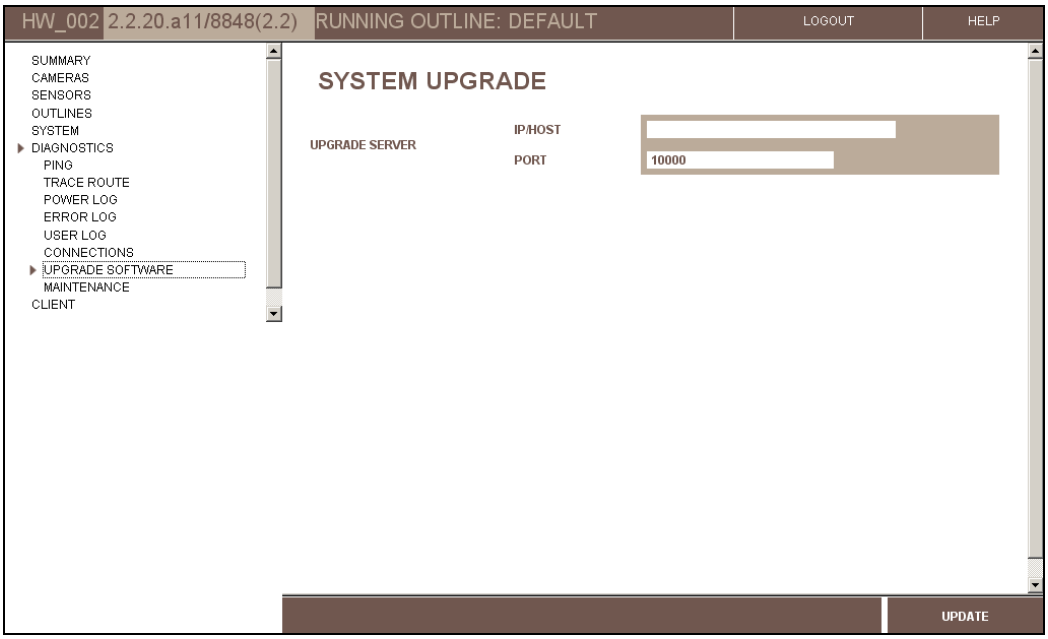


Figure 177: System Upgrade screen

2. Fill in the fields as follows:

   - **IP/Host:** The IP address or hostname of the **TVG Upload Server**
   - **Port:** The port of the **TVG Upload Server**

3. Click **Update**. The unit connects to the server, and receives a list of available firmware versions from it. It displays the list in the screen.

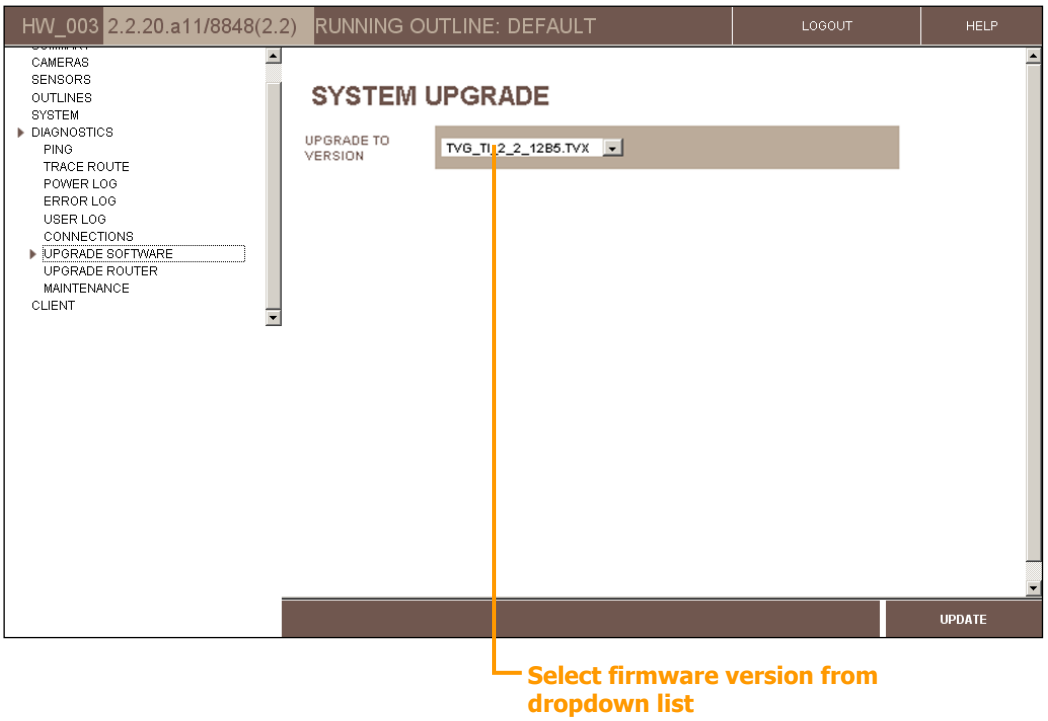


Figure 178: Available firmware versions

4. Select the required version from the list, and then click **Update**. The update process begins. A progress log is displayed.

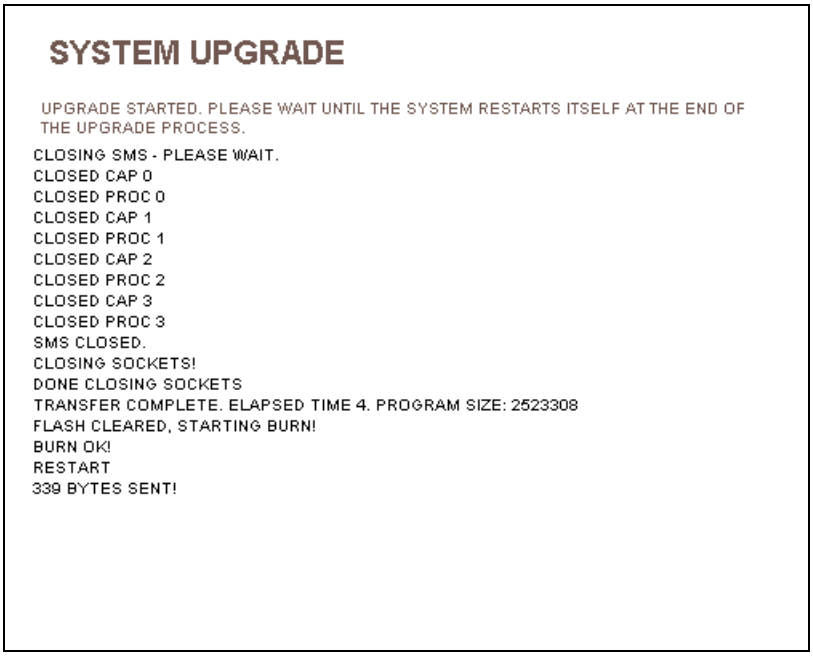


Figure 179: Log of the upgrade process

When the process is complete, you are logged out of the configuration utility. Log in again to continue configuring the unit.

Upgrading Firmware via the TVG Download Utility

If your distributor does not offer direct downloading of firmware updates via a **TVG Upload Server**, you must download the required files and install them as explained in this section. In addition, the Catch Boot operation can only be implemented using the method described below.

Required Files

To upgrade the firmware, you need the following files:

- The **Download Utility**: `TVG_download.exe`
- A DLL file required by the Download Utility: `PCOMM.dll`
- The firmware file to install on to the Video Gateway unit; the file has a `TVX` file extension (for example, `tvg_2_2_10a3.tvx`)

You can download the latest versions of these files from the SerVision website (http://www.servision.net). Be sure to save the Download Utility and the DLL file in the same folder. The firmware file can be saved in any location on your PC.

Downloading the Firmware to the Unit

The new firmware can be downloaded to the Video Gateway from a computer that is connected to the unit through a LAN, via a cross cable, or over the internet. However, because of potential communication problems when using the internet, it is recommended to download through the LAN or cross cable whenever possible.

To download the firmware to the unit:

1. Double-click the TVG_download.exe file. The **Download Utility** opens:

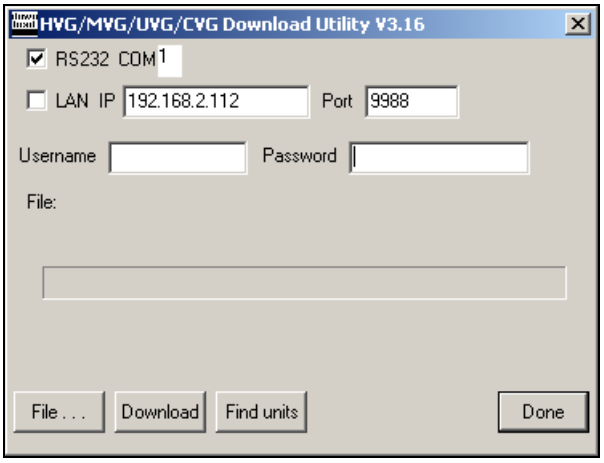


Figure 180: Download Utility

Note: The version number of the **Download Utility** appears in the title bar.

2. Select **LAN**.
3. In the **IP** and **Port** fields, enter the IP address and port of the unit in one of the following ways:
   - Manually enter the values.
   - If the TVG unit is on the same local network as the PC, click **Find units**. The opens and lists all of the TVG units on the network. Select the relevant TVG and then click **Select**. The **IP** and **Port** fields are filled in.

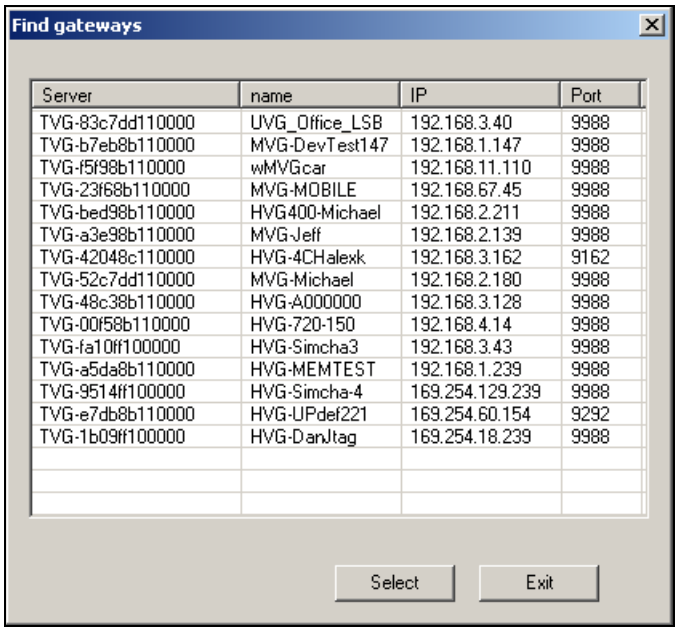


Figure 181: List of TVGs on the local network

Note: If the unit has just started up, it may not appear until its boot process is completed. In this case, click **Exit** to close the **Find gateways** dialog box, wait a minute, and then open the **Find gateways** dialog box again.

4. In the upper-right corner of the **Download Utility**, make sure the **Login** checkbox is selected, and then enter the **Username** and **Password** you use to access the configuration utility of the unit.

5. Click the **File** button at the bottom of the dialog box. A file selection dialog box opens.

6. Browse to the `TVX` firmware file that you downloaded, and then click **OK**.

   The file name appears in the window.

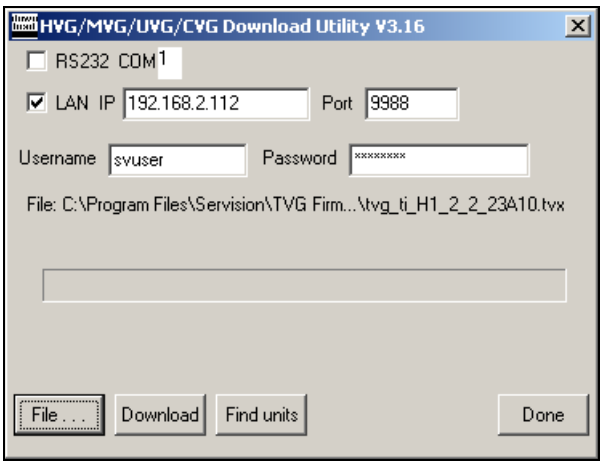


Figure 182: Download Utility with firmware file selected

7. Click **Download**.

   Download progress is indicated in the progress bar in the lower portion of the **Download Utility**. The process begins with an integrity check that ensures the file is a valid firmware file. Then the file is downloaded to the unit. When the download is completed, the unit automatically resets, and the **Software download** message is displayed.

Figure 183: Software download message

8. After about a minute, the unit reset should be complete. Once this has occurred, the **Power** LED on the front of the unit should flash at frequent intervals. If the light is not flashing – it displays as a solid green or orange all the time – the reset was not successful. In this case, disconnect the unit from the power supply and then reconnect it. The unit resets again.

   Note: If the unit is disconnected from the power supply before the **Download Utility** informs you that it has finished, the firmware may become corrupted and it may then be impossible to connect to the unit. (In this case, it may be necessary to perform a Catch Boot operation. For additional information, please refer to your system guide or consult your vendor.)

Catch Boot Operation

CAUTION: This function is for technicians only.

In some cases, a download fails and it is not possible to access the unit afterwards in the usual way. This can occur, for example, if the download was interrupted before it was completed or if an incompatible firmware version was downloaded to the unit.

When this happens, you can usually reinstall the firmware using the *Catch Boot operation*. This option uses the unit's built-in boot loader for downloading, and does not need the firmware in order to function.

NOTE: The Catch Boot operation uses an RS232 cable for download, and is much slower than LAN download.

➪ *To see whether it is possible – or necessary – to reinstall firmware using Catch Boot:*

- Unplug the unit and then plug it back in. The **Power** LED indicates whether Catch Boot is necessary and possible, as follows:

LED Behavior	Description
Flashes orange once when power is restored and then remains a solid green	Catch Boot can and should be performed.
Flashes orange/green every second	Catch Boot is not necessary, because the unit has a valid software version.
Remains solid green and does not flash orange	Catch Boot cannot be performed.
Alternates between flashing quickly for a half second and remaining solid for a half second	There is a major error in the system. Contact technical support or your vendor. Do not perform Catch Boot.

➪ *To reinstall firmware using the Catch Boot operation:*

1. Connect the Video Gateway to your computer with an RS232 connection cable.

   Note: If you do not have an RS232 cable, please consult your vendor.

   Note: If a PTZ controller is connected to the RS232 port, disconnect it first.

   Note: You must have an RS232 connector on your PC in order to perform the Catch Boot operation. If one does not exist, it is possible to purchase a USB-to-serial adaptor, and connect the RS232 cable through it. Such adaptors are available in most computer stores.

2. Run the TVG_`download.exe` utility with the `-t` parameter.

   To add the `-t` parameter, create a shortcut to TVG_`download.exe`, open its *Properties* and in the **Target** field add `-t` after the file name.

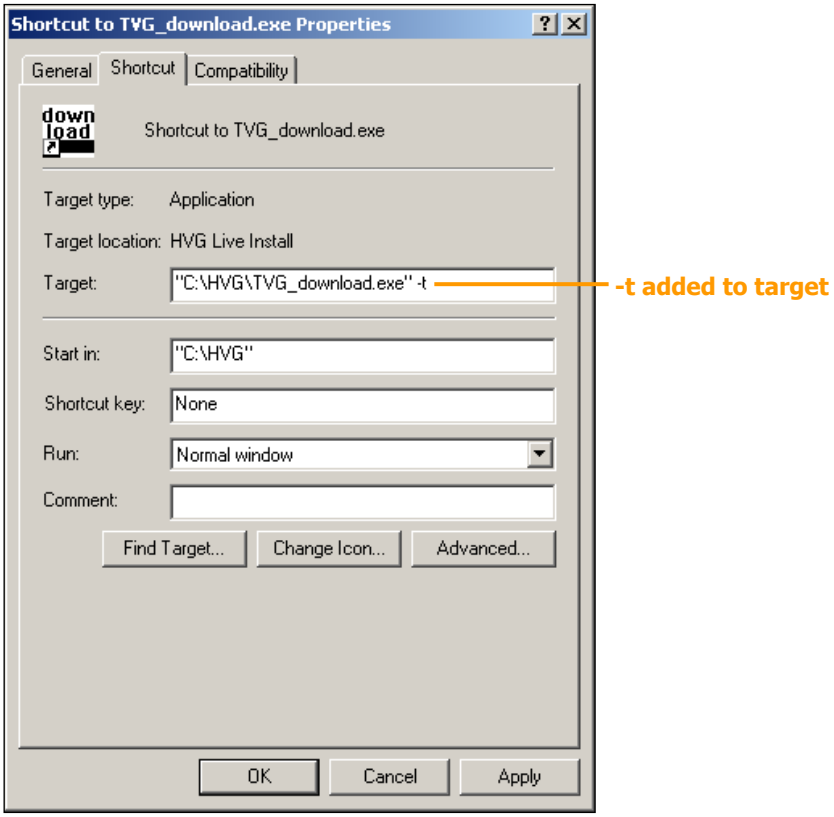


Figure 184: -t in the Target field of the shortcut properties

The **Download Utility** opens, with the **Catch Boot** option available.

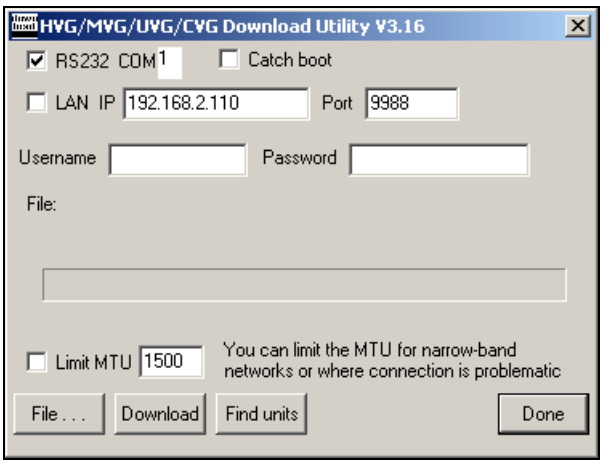
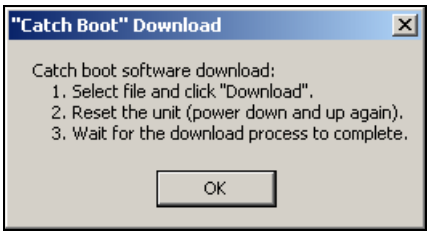


Figure 185: Download Utility with Catch Boot option

3. Select **RS232**, and then enter the **COM** port number.
4. Select **Catch boot**. A message containing instructions for using the Catch Boot feature appears:


"Catch Boot" Download
Catch boot software download:
1. Select file and click "Download".
2. Reset the unit (power down and up again).
3. Wait for the download process to complete.
OK

5. Click **OK**. The message closes.

   Note: The Catch Boot operation does not perform a login; it is not necessary to fill in the **Username** and **Password** fields.

6. Click **File**. A file selection dialog box opens.

7. Browse to the `TVX` firmware file that you want to download to the unit, and then click **OK**. The file name appears in the window.

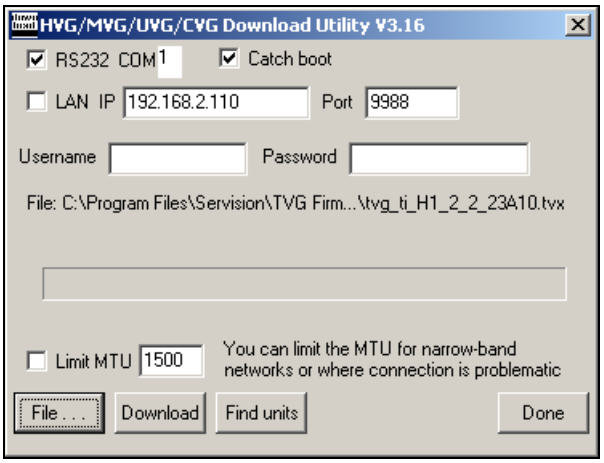


Figure 186: Catch Boot option with firmware file selected

Note: The **Limit MTU** option has no affect on the Catch Boot operation.

8. Click **Download**.

9. Disconnect the unit from the power supply and then reconnect it. The download process starts automatically, and the new firmware is downloaded to the unit.

Upgrading Router Firmware

This section explains how to upgrade the router firmware of MVG and UVG units.

You can upgrade the router firmware directly from a website such as the SerVision website. Before you begin, ask your distributor for the correct address (URL).

NOTE: Do not upgrade the router firmware unless you are told to do so by technical support staff.

NOTE: It is recommended that you save all configuration changes and restart the unit to implement them before you upgrade the router firmware.

To upgrade the router firmware:

1. In the **Main Menu**, click **Diagnostics**, and then click **Upgrade Router**. The **Router Upgrade** screen opens:

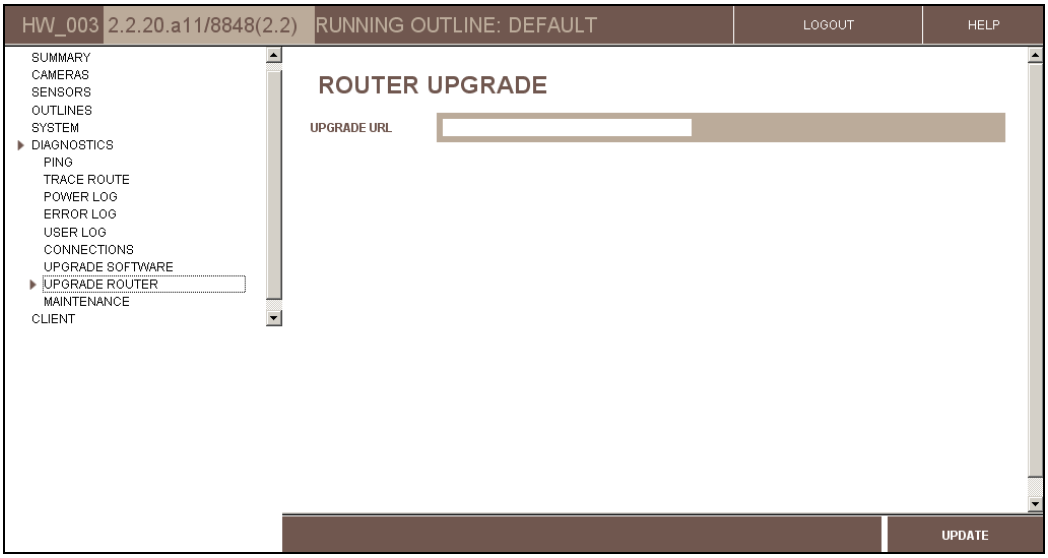


Figure 187: Router Upgrade screen

2. Under **Upgrade URL**, fill in the location of the new firmware file. For example, http://www.ru.com/ru.tgz. (Note: This is not the actual URL to use; consult your distributor for information about the correct URL.)

3. Click **Update**. The new firmware is uploaded to the unit and then the router firmware is updated.

   The upgrade process itself – once the file upload is completed – takes approximately three minutes. A timer indicates when the upgrade is completed. When it is completed, the **System Summary** screen is displayed. If this screen is not displayed within about six minutes of the end of the file upload, and you cannot connect to the unit via a client application or through the configuration utility, restart the unit by disconnecting it from the power supply and then reconnecting it. Bear in mind that interrupting the upgrade process before it is completed may cause the router to become completely inoperable, so do not restart the unit before the six minutes have passed. Note that if you are using a WiFi or cellular connection to upgrade the router firmware, it may take longer for the unit to reestablish the connection to the network.

Resetting the Unit

You can reset the unit at any time. Resetting the unit may help if video streaming is unreliable or frequently interrupted. In addition, most configuration changes you make are only fully implemented after the unit is reset. If changes were made to the configuration of the unit, and the changes were saved on the unit, but the unit was not reset afterwards, the changes are implemented when the unit is reset. Resetting does not cause any settings to be lost or restored to their default values.

The unit can be reset in one of the following ways:

- Through the configuration utility
- By unplugging the unit from the power

On MVG and UVG units, resetting the unit also resets the router. If you wish, you can reset the router without resetting the unit. While the router is restarting, you will not be able to connect to unit, but it will continue to record video and event information.

To reset the unit using the configuration utility:

1. Log into the configuration utility (see *Opening the Configuration Utility*, page 9).
2. In the **Main Menu**, under **System**, click **Restart**. The **System Restart Page** opens.
3. Click **Restart System**. The unit restarts.

To perform a power reset:

- Unplug the unit from the power and then plug it in again.

To reset a SerVision router:

1. Log into the configuration utility (see *Opening the Configuration Utility*, page 9).
2. In the **Main Menu**, under **System**, click **Restart**. The **System Restart Page** opens.

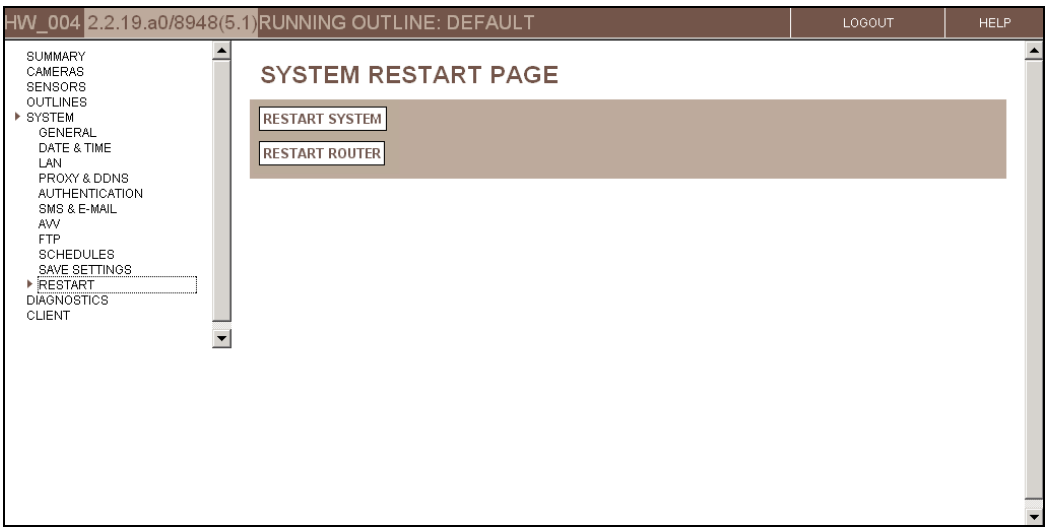


Figure 188: System Restart Page with Restart Router button

3. Click **Restart Router**. The router restarts.

Restoring Factory Settings

If you need to restore the factory settings of the unit, you can do this in one of two ways.

- **Software:** If you can connect to the unit's configuration utility through the local network, you can restore the default settings in the **Save Settings** page (see *Restoring Default Settings*, page 128).
- **Hardware:** If you cannot connect to the unit, you can reset the settings as described below. This may be necessary when certain configuration settings are set incorrectly or you forget their values. For example, if you forget all username and password pairs that have permissions for configuring the unit, you will not be able to access the configuration utility.

When you use either method to restore the factory settings, the following changes are implemented on the unit:

- The unit's IP and port are reset to the IP and port that appear on the sticker on the underside of the unit (usually, the IP is 192.168.1.210 and the port is 9988).
- The two default usernames are set to their default values and all other usernames are deleted (the username and password required for access to the configuration utility are reset to **`svuser`** and **`servconf`** respectively).
- All other settings are reset to their original values.
- All recorded video on the Video Gateway unit is erased.

After you have restored the factory settings, you can access the unit as described under *Opening the Configuration Utility*, on page 9.

Hardware-based restoration of factory settings is accomplished by shorting two of the pins of the **RS232/485** connector together. To perform this procedure, it is best to use a jumper. Jumpers are available at any electronics supply store.

Figure 189: Jumper

To reset the configuration settings to their factory values:

1. Disconnect the unit's power.
2. If anything is plugged into the **RS232/485** connector (e.g., a PTZ camera controller or the supplied RS232/485 adaptor), disconnect it from the port.
3. Place the jumper on pins 2 and 3 of the **RS232/485** connector.

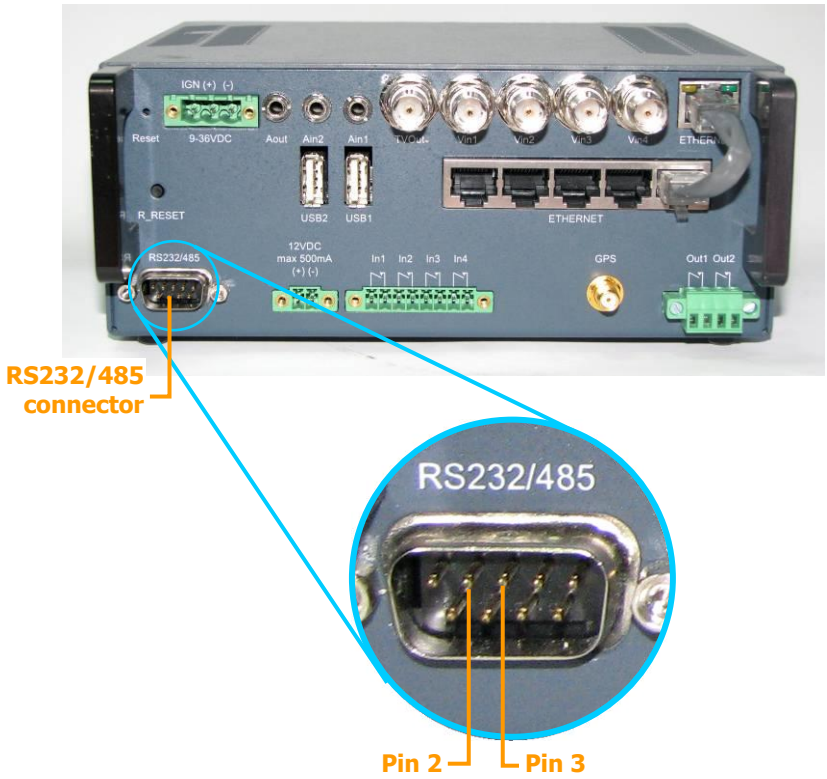


Figure 190: Pins to short in order to restore the factory setting (MVG)

Figure 191: Pins to short in order to restore the factory settings (CVG)

Figure 192: Jumper connected to pins 2 and 3

4. Reconnect the power to the unit. When the startup process is completed (the **Power** LED on the front of the unit flashes at frequent intervals), the default factory settings are restored.
5. Disconnect the power from the unit again.
6. Remove the jumper from the **RS232/485** connector.
7. If you disconnected a PTZ controller before performing this procedure, reconnect the controller.
8. Reconnect the power to the unit.

Troubleshooting

This section contains a list of common problems and suggestions for finding solutions. If you cannot solve a problem you are having with the unit, please contact technical support.

NOTE: The technical support representative may ask you for the serial number of your unit. The serial number appears on the sticker on the underside of the unit, and is labeled *S/N*.

1. **Problem:**

   After modifying configuration settings and restarting the Video Gateway, the unit cannot be accessed.

   Solution:

   Disconnect the power supply from the unit and then reconnect it.

   Additional information: *Resetting the Unit*, page 161

2. **Problem:**

   The firmware update process did not complete properly, and the Video Gateway unit cannot be accessed.

   Solution:

   Disconnect the power supply from the unit and then reconnect it. If the LED on the front of the unit flashes orange once when it starts up and then displays as a solid green (and is not flashing), reinstall the firmware using the Catch Boot operation. If the LED displays as a solid orange, or does not flash orange once before it becomes a solid green, contact your distributor.

   Additional information: *Catch Boot Operation*, page 156

3. **Problem:**

   The unit can be accessed by PCs that are connected to the LAN, but not by remote client devices.

   Solutions:

   - Check that the relevant network settings are correct.

     Additional information: *LAN Settings*, page 38; *Modem*, page 40; *WiFi*, page 46

   - Check the firewall settings of the network gateway (router); ensure that the required port is open for incoming connections and that the port is forwarded correctly.

     Additional information: *Ports*, page 19

4. **Problem:**

   A connection to a cellular network cannot be established.

   Solutions:

   - Ensure that all of the connection parameters are defined correctly in the **Modem Configuration** screen.
   - If you are using a GSM modem, check if the SIM card is PIN-protected. If it is, ensure that the correct PIN is entered in the **Modem Configuration** screen.
   - Contact your cellular provider to ensure that the modem settings are correct and the line is active.

- If LCP is enabled, try disabling it.

Additional information: *Modem*, page 40.

---

5. **Problem:**

   A username and/or password that can be used to access the unit's configuration utility are not known.

   Solution:

   Restore the factory settings to the unit and then reconfigure it.

   Additional information: *Restoring Factory Settings*, page 162

6. **Problem:**

   Only the **Client** option appears in the **Main Menu**.

   Solution:

   You have logged in using a username for which only client permissions are selected. Login using a username for which configuration permission is selected.

   Additional information: *Authentication*, page 57; *Connecting through the Configuration Utility*, page 134

7. **Problem:**

   When client applications attempt to connect to the unit, an "Authentication failed" error is displayed in the client.

   Solution:

   Ensure that the client application is configured with a username for which client permissions are selected.

   Additional information: *Authentication*, page 57

8. **Problem:**

   TV-Out does not appear in the **Main Menu**.

   Solution:

   - Contact your vendor for support.

9. **Problems:**

   - Video does not display properly in the client application:
   - You cannot see any video.
   - The video image is distorted.
   - The frames flow upwards constantly.
   - A horizontal black stripe appears near the bottom of the client video display.

   Solution:

   The system is not configured for the proper video format. Ensure that video format used by the camera (PAL or NTSC) is selected in the **General System Settings** screen.

   Additional information: *Configuring General System Settings*, page 21 (in particular, on the **Video Mode** field, see page 22)

10. Problems:

- Video of events that was supposed to be uploaded to an AVV server automatically (by means of the AVV feature) does not appear there.
- A link to video that was uploaded to an AVV server appears in an e-mail notification, but when you click the link, the browser cannot find the file. The browser returns an error message – for example, "http error 404," "The webpage cannot be found," or "Not Found."

Solutions:

- Ensure that the port forwarding and firewalls of the external networks and of the FTP server's network are configured to permit communication on the specified port.
- Ensure that the AVV configuration settings are correct.
- Wait a few minutes. Video of an event is only uploaded after the event ends. Processing and uploading also take some time. When the event is successfully uploaded, you will receive an additional e-mail telling you that the upload ended and including the same link. Click the link in this e-mail and the file should be available on the AVV server.
- If the camera is set to record by event, ensure that the sensor (VMD, sensor, activator) triggering the AVV is defined as a trigger for recording in the camera's configuration.

Additional information: *Automatically Uploading Video to an AVV Server*, page 64; *Configuring Video Recording*, page 96

11. Problem:

The standard video quality settings do not work well with a client application.

Solutions:

- In the video recording settings, select **Enable Advanced Settings**, and customize the bitrate and framerate. The customized settings will now be available in client applications for live as well as recorded video.

  Additional information: *Video Recording Settings*, page 96

- Contact technical support for information about customizing stream properties.

12. Problem:

The unit does not record video even though it is configured to do so, or video that was recorded by the unit cannot be accessed by any of the client applications.

Solutions:

- Ensure that the unit time and the time zone are correct.

  Additional information: *Setting the Unit Time*, page 33

- In the **System Diagnostics** screen, check the **System Clock** status. If the status is "Error," try resetting the clock manually. If that does not solve the problem, contact technical support.

  Additional information: *System Statistics*, page 140; *Setting the Unit Time*, page 33

- If you have configured the unit for event-triggered recording, ensure that at least one sensor is selected as a trigger, that the selected sensors are functioning properly, and that one or more of the sensors detected events during the time period from which you attempted to view recorded video.

  Additional information: *Configuring Video Recording*, page 96

- In the **System Diagnostics** screen (or the **System** screen), check the **HD Size** and **HD Model**. If the size is 0 or the model is incorrect, there may be a problem with the storage media. Contact your vendor.

  Additional information: *System Statistics*, page 140

13. Problem:

The unit is connected to a LAN but cannot be accessed through the LAN.

Solutions:

- Ensure that the Ethernet (network) cable is fully inserted into the **Ethernet Out** connector on the rear panel of the Video Gateway unit.

  Additional information: Please refer to the unit's installation guide for information about connecting the unit to a network.

- Check whether the LEDs on the rear panel of the unit are blinking. If they are not, replace the Ethernet cable that connects the unit to the LAN.

- On MVG and UVG units, make sure the router is enabled.

  Additional information: *LAN Settings*, page 38

- On MVG and UVG units, ensure that the short Ethernet cable connecting the Video Gateway component of the Video Gateway to the unit's router is properly inserted into both connectors (the top-most Ethernet connector on the right and the Ethernet connector immediately below it).

- On MVG and UVG units, if both Ethernet cables are functional and properly inserted into their connectors but the LEDs on the rear panel of the unit are not blinking, contact technical support.

- Replace the Ethernet cable that connects the unit to the LAN.

- Contact technical support.

14. Problem:

The Power LED on the front panel of the unit lights up, but the unit cannot be accessed by any external devices.

Solutions:

- Ensure that you are using the power supply cable that came with the unit. (If you use certain types of incompatible power supply cables, the power LED will light up, but the unit will not have sufficient power to perform any other functions. For example, be sure not to use the cable from an HVG 200 unit with an HVG 400, a UVG 400, or a CVG.)

- Restart the unit and observe the Power LED on the front panel. The normal power-up sequence includes a number of flashes: The LED starts out green, flashes orange, turns green again, flashes five times, and, finally, when the start-up process is completed and the unit is operating normally, blinks every second.

- If the unit completes part of the start-up sequence and then restarts without completing the process, try reinstalling the firmware using Catch Boot.

  Additional information: *Catch Boot Operation*, page 156

- If the unit completes the entire start-up sequence and then restarts, try restoring the factory settings.

  Additional information: *Restoring Factory Settings*, page 162

- If the LED displays as a solid green at power-up, or displays as a solid green and then a solid orange but does not flash, the unit is unusable. Contact your vendor for additional assistance.

15. Problem:

The unit does not turn on – the Power LED on the front panel does not light up and the unit cannot be accessed by any external devices.

Solutions:

- Check the power connections and cables.
- Contact your vendor for assistance.

Note: Do not open the Video Gateway. It contains no user-serviceable parts.

16. Problem:

The unit disconnects from and reconnects to the MultiClient every few minutes.

Solutions:

- Check that the external LAN connection is connected to the **Ethernet Out** connector on the rear of the unit.
- Contact your vendor for assistance.

17. Problem:

The internal speaker on the HVG is enabled but sound that is transmitted from a client device is not audible.

Solution:

Ensure that the **Mute** button on the rear of the unit is turned off.

Additional information: *Configuring General System Settings*, page 21 (in particular, see the note about the **Speaker** field on page 22)

Appendix A: Viewing Video on a CCTV Monitor (TV-Out)

This appendix explains how you can view video on a CCTV monitor if one is connected to your Video Gateway. These instructions assume that a supported CCTV monitor is connected to your Video Gateway and TV-Out is activated in the unit's configuration (see *Configuring a CCTV Monitor (TV-Out)*, page 28). For information about acquiring and connecting a CCTV monitor to your Video Gateway, please refer to the installation guide.

If a CCTV monitor is connected to your Video Gateway, you can view video on it. The default display is defined in the unit's configuration (see *Configuring a CCTV Monitor (TV-Out)*, page 28). The following options are available:

- Full-screen display of live video from one of the cameras
- Full-screen display of live video that loops from one camera to the next at specified intervals
- Split-screen display of live video from all of the cameras

Figure 193: Split-screen displays video from all cameras simultaneously

Figure 194: Full-screen display

When the Video Gateway unit starts up, the monitor displays a startup screen containing the name of the unit, its private IP in the local network, the firmware version, and a video pane displaying live video from one of the cameras connected to the unit. If mouse/touch is activated, a **Done** button also appears. After a few seconds, this display is replaced by the default video display.

Figure 195: Startup screen

NOTE: If the unit is configured to connect to an external LAN using DHCP (see *LAN Settings*, page 38), `[DHCP]` appears after the IP address. If the IP address was not yet assigned when the startup screen was displayed, 0.0.0.0 appears instead of the IP address. If mouse/touch controls are available (see below), you can see the correct IP in the **Sys Info** screen (see *Viewing System Information on the Monitor*, page 196) after it is assigned.

The default display can be changed on the fly using one or both of the following methods:

- **Mouse/Touch:** HVG and UVG models are supplied with a mouse. If the mouse is connected to the Video Gateway, you can use it to perform a variety of operations on the monitor: changing the sizes of the camera panes, selecting cameras, activating PTZ camera controls, and playing recorded video. The same operations can be performed on MVG, CVG, and CVG-M units if they are connected to supported touchscreen monitors. In this case, touching the screen activates the same features that would be activated on the other models by clicking the left mouse button.
- **Push-button switch:** If a switch is connected to the relevant sensor connector on the rear panel of the unit, you can use the switch to cycle through the various available display types. However, you can only view live video, and PTZ controls are not available.

NOTE: Mouse/touch controls only work if they are enabled in the configuration, and a push-button switch can only be used if the relevant sensor connector is configured properly and the option is enabled. For additional information, see *Configuring a CCTV Monitor (TV-Out)*, page 28; *Configuring a Sensor to Control CCTV Display*, page 116.

The rest of this appendix explains how to use the mouse/touch controls to perform various operations. For information about connecting the supplied mouse or a supported touchscreen monitor, please refer to the Video Gateway unit's installation guide.

NOTE: If you are using a touchscreen, it is recommended that you calibrate it before you use it for the first time. For information about how to do this, please consult the manufacturer's documentation or your vendor. In addition, for optimal precision and sensitivity, it is recommended to use a pen, a pencil, or a stylus to tap the screen. Do not press hard or stab the display – the screen is quite delicate!

Using Mouse/Touch Controls

If mouse/touch controls are set up and enabled on your Video Gateway (see page 172), you can perform the following actions:

- Switch from split-screen to full-screen display
- View recorded video
- Edit and download recorded video
- Configure picture and display properties
- View system settings
- Control PTZ cameras

These actions are performed through a menu that can be displayed on the monitor's screen.

➪ *To open the monitor's main menu:*

- Click/tap anywhere on the screen. The menu is displayed on the left side of the screen. A single quarter-screen camera pane is displayed in the upper-right corner of the screen.

Figure 196: Main monitor menu

NOTE: If the display at the time you opened the menu consisted of a full-screen camera pane, the camera pane is reduced in size from full-screen to quarter-screen. If the display previously contained multiple quarter-screen camera panes, only the top-right pane is displayed.

The menu contains the following options:

Option	Description
Display	Selects the type of video display and activates or deactivates looping from camera to camera
Playback	Plays recorded video
Edition	Enables you to select a number of excerpts from recorded video for viewing or downloading to an FTP server
Config	Configures various display options
Sys info	Displays the name and network settings of the Video Gateway
PTZ	Enables you to activate the controls of PTZ cameras **Note:** This option only appears in the menu if the PTZ controls of at least one camera are activated in the unit's configuration.
Fix cursor	In some cases, the image of the cursor can become slightly distorted, such that is it difficult to identify the exact location at which it points. If this occurs, select this option to return the cursor to its normal arrow form ( ). **Note:** If the cursor is not distorted, selecting this option may cause it to become distorted. Furthermore, selecting this option repeatedly may cause the unit to crash, such that it must be restarted manually.
Done	Closes the menu

Setting the Video Display Layout

You can switch the video display from full-screen to split-screen, or vice-versa, and choose to loop the full-screen display from camera to camera.

To select a video display layout:

1. In the main monitor menu, select **Display**. The **Display** menu opens, with the current video display setting highlighted:

Figure 197: Display menu

2. Select one of the following options:

Option	Description
QUAD	Set the display to a split screen, in which the display is divided into four video panes, and video from up to four cameras is displayed simultaneously.
VGA [1] [2] [3] [4]	Select the number of a camera for full-screen display. For example, select **1** to display live video from Camera #1. **Note:** Cameras that are not enabled do not appear in the list.
SWITCH	Display full-screen video, and loop from one camera to the next. **Note:** The default interval is set in the unit's configuration. You can modify it on the monitor, if you wish (see *Adjusting Loop Interval and Screen Saver Settings*, page 191).
NONE	Do not display any video.
Done	Close the menu without making any selections.

The display option you selected is implemented, and the menu is closed.

Playing Back Recorded Video

If the Video Gateway is configured to record video, either continuously or in response to events (see *Video Recording Settings*, page 96), you can view the recorded video on the monitor. You can select the recorded video to view by start time or by event (VMD or sensor).

To play recorded video:

1. In the main monitor menu, select **Playback**. The **Playback** menu opens, with the default settings highlighted.

Figure 198: Playback menu

2. Under **Select By**, select one of the following:

Option	Description
Time	To select the video for playback by selecting start and end times
Sensor	To select the video for playback by selecting a sensor event

The selected option is highlighted.

3. Under **Camera**, select the number of the camera from which you want to see the recorded video. For example, select **1** to display recorded video from Camera #1. The selected option is highlighted.

4. Under **Display**, select the desired playback size:

   - **SIF:** Quarter-screen
   - **VGA:** Full-screen

   The selected option is highlighted.

5. Select **Next**. The relevant playback selection screen opens. If you selected playback by time, the **Time Selection** screen is displayed; if you selected playback by sensor, the **Sensor Selection** screen is displayed. You can use these screens to select the video you want to see and start playback in the **Playback** screen. Follow the instructions in the next sections (see *Playback by Time*, page 176, and *Playback by Sensor*, page 176) to select the recorded video you want to see.

Playback by Time

If you selected playback by time in the **Playback** menu, the **Time Selection** screen opens.

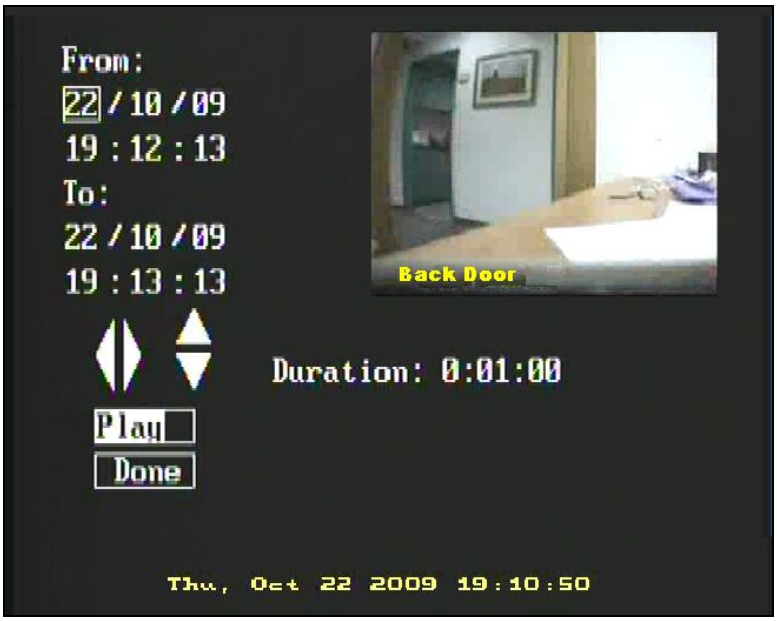


Figure 199: Time Selection screen

To play back recorded video by time:

1. Under **From**, select the date and time at which you want to begin playback, and under **To**, select the date and time at which you want to end playback, as follows:

   - Select the value you want to modify (e.g., in the figure above, under **From**, select "12" if you want to change the minute value of the start time), or select the right and left arrows to scroll through all of the values. A box appears around the selected value.
   - Select the up and down arrows as necessary to modify the selected value.

   The duration of the selected time period appears under **Duration**.

   Note: To close the screen and return to live video display, select **Done**.

2. Select **Play**. The **Playback** screen opens, and the video is played, beginning with the specified start date and time, in the size you specified in the **Playback** menu. Playback controls appear in the upper left of the screen. See *The Playback Screen*, page 178, for information about the **Playback** screen.

Playback by Sensor

If you selected playback by sensor in the **Playback** menu, the **Sensor Selection** screen opens. The screen contains a list of the sensors connected to the selected camera (including the camera's VMD, if it is activated).

Figure 200: Sensor Selection screen

To play back video of an event that was detected by a sensor:

1. In the **Sensor Selection** screen, select the sensor that triggered the event. The **Date Selection** screen opens and displays a list of all the dates for which there is recorded video of events that were triggered by the selected sensor:

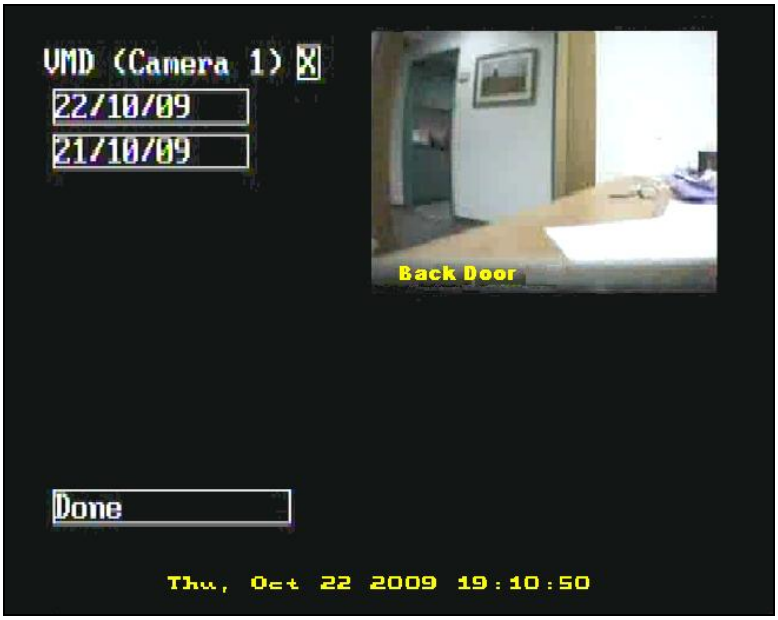


Figure 201: Date Selection screen

Note: To close the screen and return to live video display, select **Done** or select the button above the menu.

2. Select the desired date. The **Event-Time Selection** screen opens and displays a list of the start times and durations of the events recorded on that date. (The durations appear in parentheses after the time, in seconds)

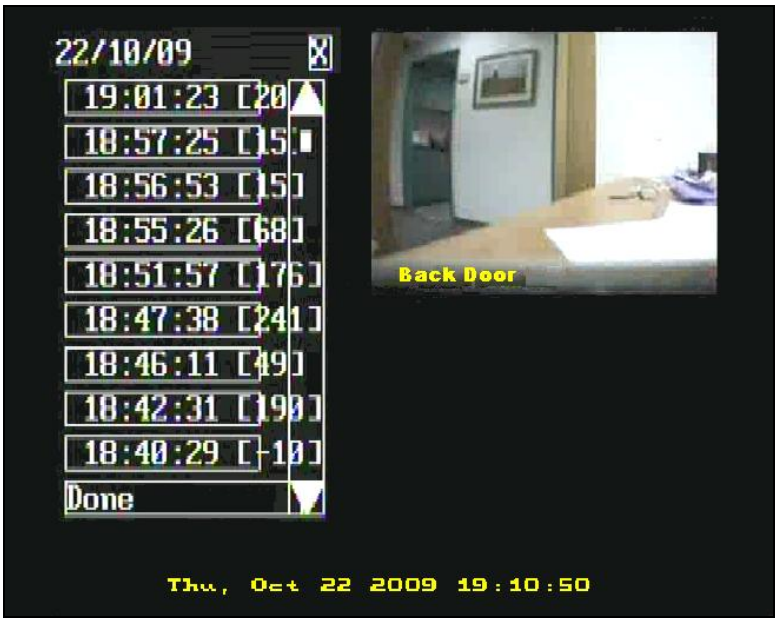


Figure 202: Event-Time Selection screen

3. Select the down or up arrows of the scroll bar to display additional event times, if necessary.

   Note: Selecting the scroll bar itself does not scroll the list; only the arrows at the top and bottom of the scroll bar can be used to scroll.

   Note: To close the screen and return to live video display, select **Done** or select the button above the menu.

4. Select a time. The **Playback** screen opens, and the video is played, beginning with the specified start date and time, in the size you specified in the **Playback** menu. Playback controls appear in the upper left of the screen. See *The Playback Screen* below for information about the **Playback** screen.

The Playback Screen

The **Playback** screen contains a camera pane in which the selected video is played, as well as playback and navigation controls. If the display options call for a timestamp and/or the camera name, they are superimposed on the camera pane. For information about setting these options, see *Configuring a CCTV Monitor (TV-Out)*, page 28; *Adjusting On-Screen Information Display*, page 193.

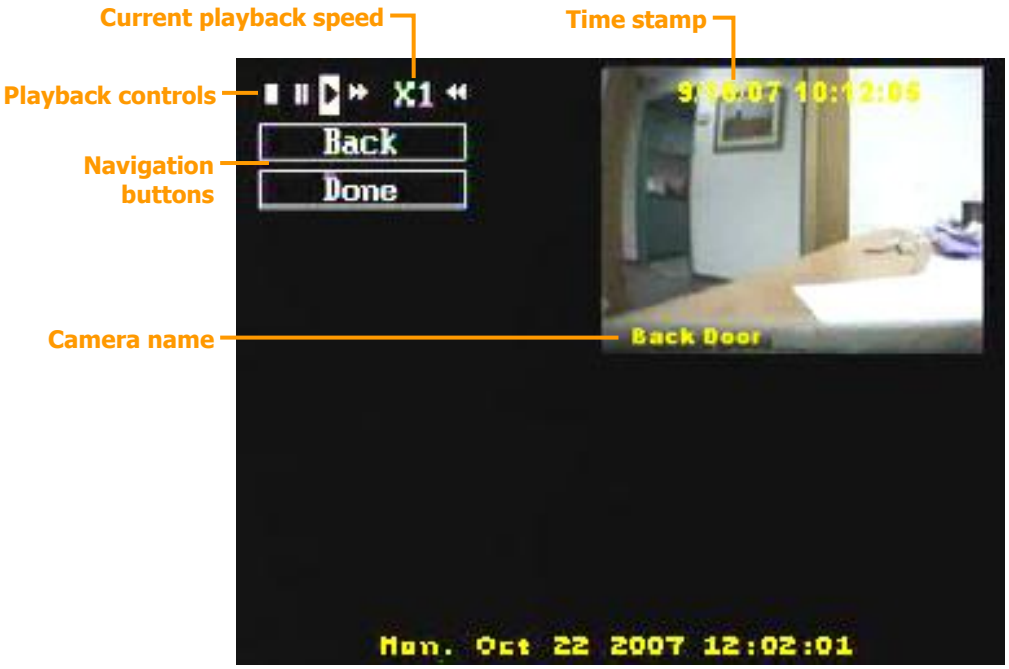


Figure 203: Playback screen with quarter-screen camera pane

NOTE: If you chose VGA playback size in the **Playback** menu, playback is full-screen, and the controls overlap the picture. If you chose SIF, playback is in a camera pane at the upper right of the screen.

Playback continues for about 24 hours unless you use one of the playback controls or navigation buttons to stop it.

To use the playback controls:

- Select the buttons as follows:

Playback Control	Description
Stop	Stop playback. To resume playback, select **Play**. Playback resumes from the original start time.
Pause	Pause playback. To resume playback, select **Play**. Playback resumes from the pause time.
Play	Resume playback after playback has been paused or stopped.
Increase speed	Increase playback speed. Each click/tap increases speed by 2X (2X, 4X, 8X, 16X). (The current playback speed is indicated to the right of this button.)
Decrease speed	Reduce playback speed. Each click/tap reduces speed by 2X (16X, 8X, 4X, 2X). (The current playback speed is indicated to the left of this button.)

The navigation buttons allow you to end the playback session before it is closed automatically.

To use the navigation buttons:

- Select the buttons as follows:

Button	Description
Done	Stop playback and return to live video display.
Back	Stop playback and return to the Playback menu.

Editing and Downloading Video Excerpts

You can store a list of excerpts from recorded video that are of particular interest to you. You create the list by means of the CCTV monitor interface, and it is stored on the Video Gateway unit. You can add new items to the list at any time, or clear the list and start creating a new one from scratch. As long as the video excerpts in the list are stored on the Video Gateway unit, you can play them on the monitor and download them to your FTP server.

The current list of excerpts is called the *edition*, and each video excerpt it contains is called an *item*. You can play the items in the current edition on your CCTV monitor whenever you wish. When you do so, the items play one after the other in the order in which they appear in the list. In addition, you can download the entire contents of the edition to your FTP server. The items are incorporated into a single video file for downloading.

The edition feature can be used to help you locate and keep track of important recorded video. For example, if an intruder is recorded by *camera 1* when he enters a building, *camera 2* when he enters a particular office, and *camera 3* when he leaves the building, you can select the footage from each camera in which the intruder appears and create a single video recording containing the three excerpts. You can then play the three recordings on the monitor in succession in order to study them more carefully or show them to a supervisor or other security staff; you will not have to search for the relevant parts each time you want to see them. In addition, you can download a file containing all three recordings to an FTP server in order to save it for later use and distribute it to other viewers.

You can manage the edition in the **Edition** menu. The menu provides access to the feature's controls and, at the top of the screen, shows the current name of the edition (if it has a name) and the number of items it contains.

To open the Edition menu:

- In the main monitor menu, select **Edition**.

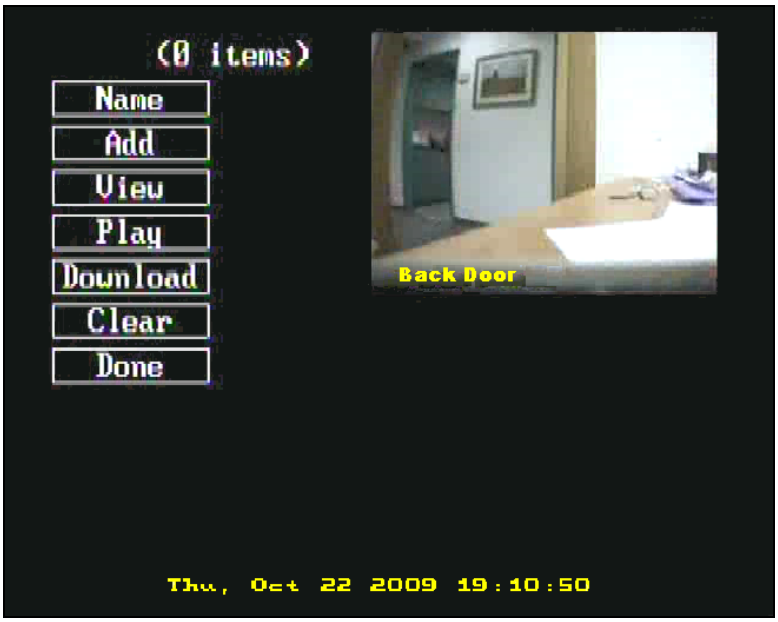


Figure 204: Edition menu

Naming the Download File

If you want to download the edition, you should assign a name to it. When you download an edition to the FTP server, this name becomes the name of the file. The current name of the edition appears at the top of the **Edition** menu.

➪ *To name the edition:*

1. In the **Edition** menu, select **Name**. The **Name** screen opens. The field at the top of the screen displays the current name, if the edition has one. Below the field is a virtual keyboard you can use to modify the existing name or type one.

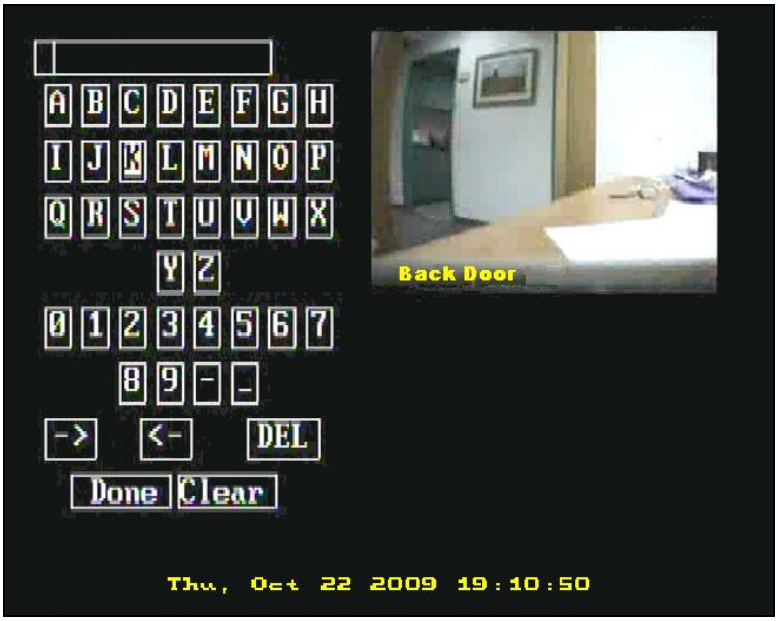


Figure 205: Name screen

2. Select the "keys" of the virtual keyboard to type a name for the edition. The characters you select appear in the text field at the top of the screen.

3. When you have finished typing the name, select **Done** to save the name. The **Name** screen closes, and the **Edition** menu is displayed. The name you specified appears at the top of the menu.

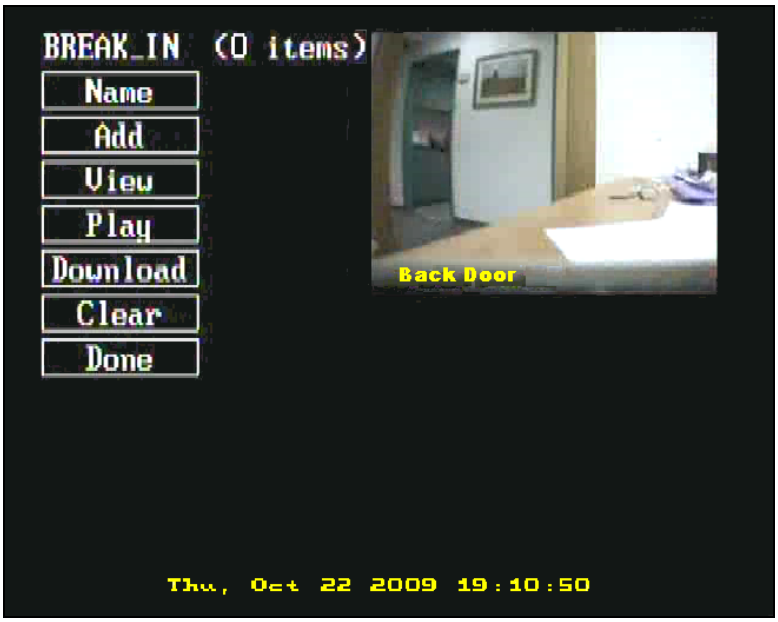


Figure 206: Edition menu with name (BREAK_IN)

Adding Items to the Edition

You can add one or more items to the edition. You can select an item to add either by selecting a time range or by selecting an event.

To add an item to the edition:

1. In the **Edition** menu, select **Add**. The **Add** menu opens.

Figure 207: Add menu

2. Under **Select By**, select one of the following:

Option	Description
Time	To select the item by selecting start and end times
Sensor	To select the item by selecting a sensor event

3. Under **Camera**, select the number of the camera from which the video was recorded. For example, select **1** to select recorded video from Camera #1.
4. Under **Display**, select the desired video frame size:
   - **SIF:** Quarter-screen
   - **VGA:** Full-screen
5. Select **Next**. The relevant recording-selection screen opens. If you chose to select the video by time, the **Time Selection** screen is displayed; if you chose to select the video by sensor, the **Sensor Selection** screen is displayed. Follow the relevant instructions below to select the video excerpt to add to the edition.

   Note: To close the screen and return to the **Edition** menu without adding any new items to the edition, select **Done**.

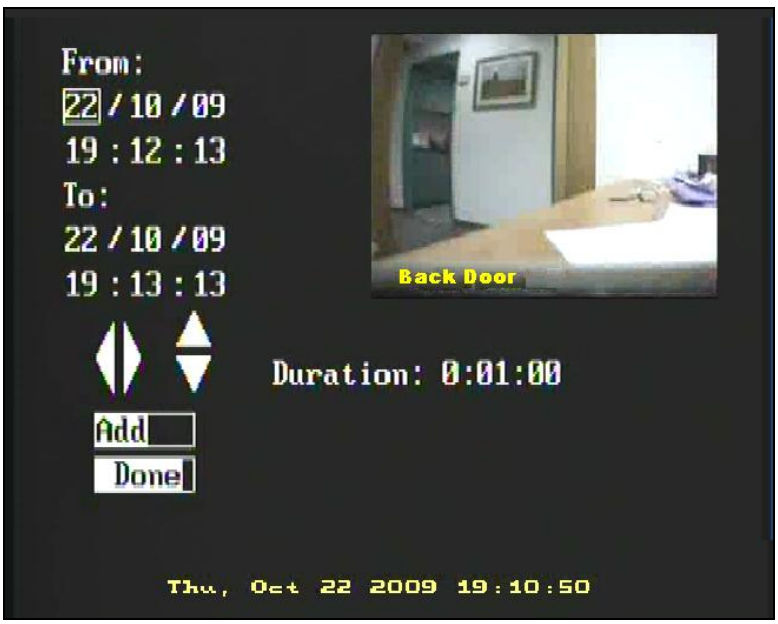


Figure 208: Time Selection screen

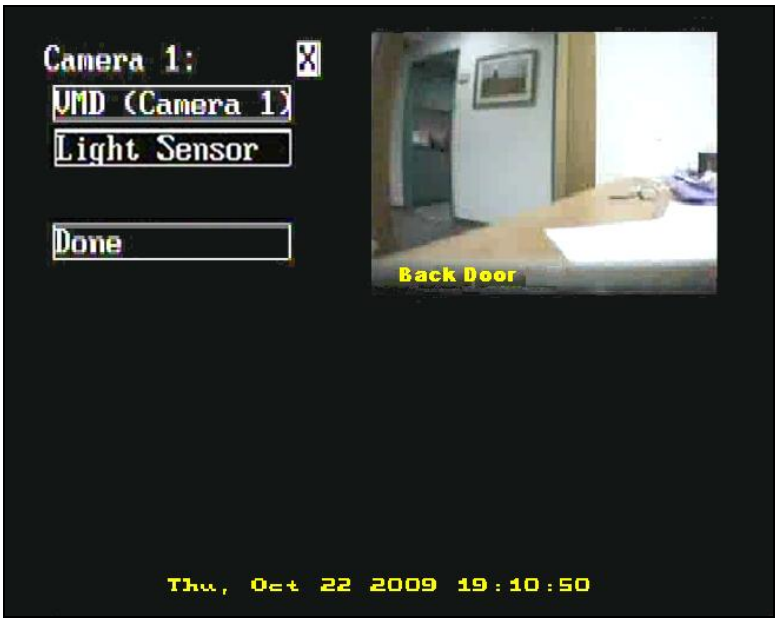


Figure 209: Sensor Selection screen

➪ *To select the video excerpt by time:*

1. In the **Time-Selection** screen (figure 208), under **From**, select the date and time of the beginning of the excerpt, and under **To**, select the date and time of the end of the excerpt, as follows:

   - Select the value you want to modify (e.g., in the figure above, under **From**, select "12" if you want to change the minute value of the start time), or select the right and left arrows to scroll through all of the values. A box appears around the selected value.
   - Select the up and down arrows as necessary to modify the selected value.

   The duration of the selected time period appears under **Duration**.

   Note: To close the screen and return to the **Edition** menu without adding any new items to the edition, select **Done**.

2. Select **Add**. The excerpt is added to the edition. The **Time Selection** screen closes, and the **Edition** menu appears. The item counter at the top of the **Edition** menu indicates that a new item has been added to the edition. For example, it this is the second item that was added, *(2 items)* appears at the top of the menu.

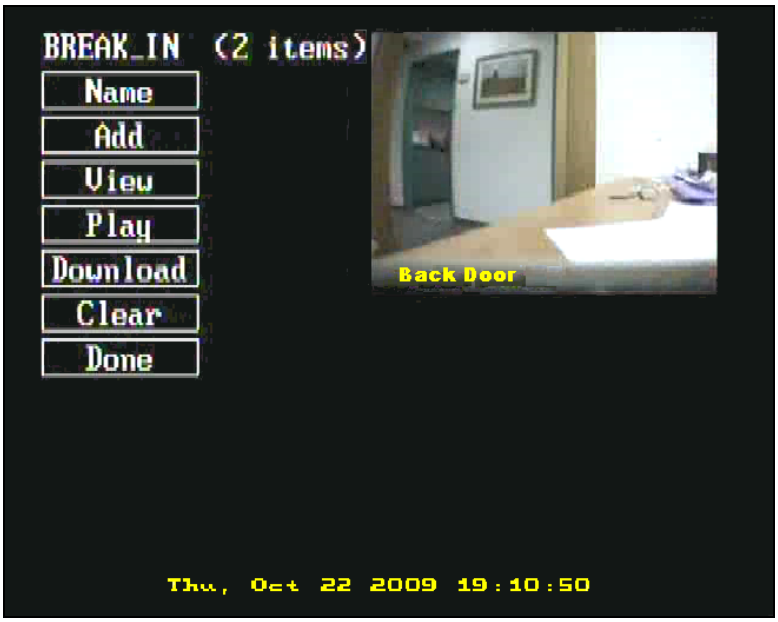


Figure 210: Edition menu with two items added

➪ *To select the video excerpt by event:*

1. In the **Sensor Selection** screen (figure 209), select the sensor that triggered the event. The **Date Selection** screen opens and displays a list of all the dates for which there is recorded video of events that were triggered by the selected sensor.

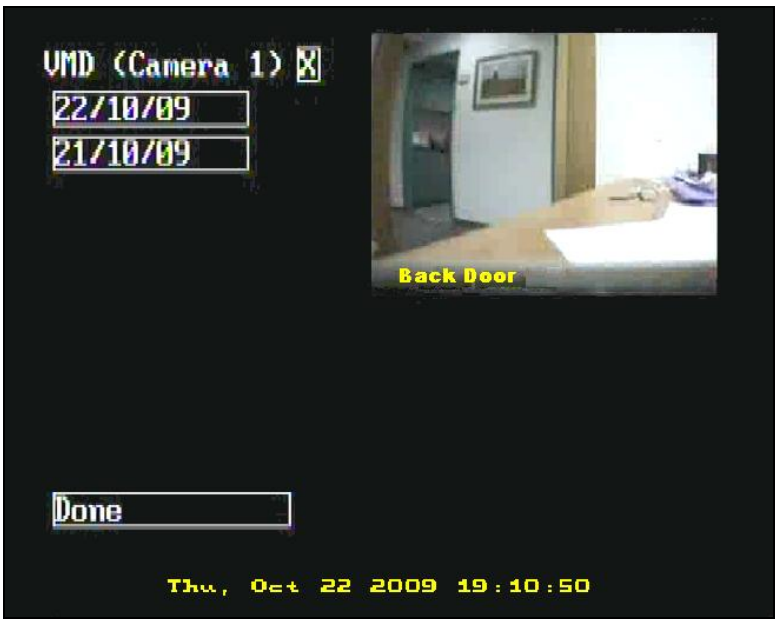


Figure 211: Date Selection screen

Note: To close the screen and return to the **Edition** menu without adding any new items to the edition, select **Done** or select the button above the menu.

2. Select the desired date. The **Event-Time Selection** screen opens and displays a list of the start times and durations of the events recorded on that date. (The durations appear in parentheses after the time, in seconds)

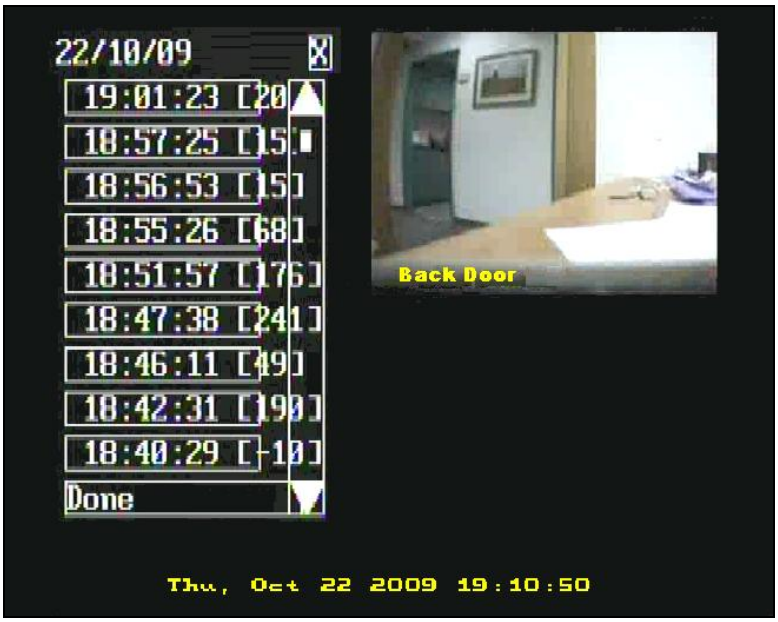


Figure 212: Event-Time Selection screen

3. Select the down or up arrows of the scroll bar to display additional event times, if necessary.

   Note: Selecting the scroll bar itself does not scroll the list; only the arrows at the top and bottom of the scroll bar can be used to scroll.

   Note: To close the screen and return to the **Edition** menu without adding any new items to the edition, select **Done** or select the button above the menu.

4. Select a time. The event is added to the edition. The **Event Time Selection** screen closes, and the **Edition** menu appears. The item counter at the top of the **Edition** menu indicates that a new item has been added to the edition. For example, it this is the second item that was added, *(2 items)* appears at the top of the menu (see figure 210).

Viewing the List of Items in the Edition

You can see a list of the items that are included in the edition.

➪ *To view the list of items in the current edition:*

- In the **Edition** menu, select **View**. The View screen opens and displays a list of the video items in the current edition. For each item, the camera, date, start time, and duration appear.

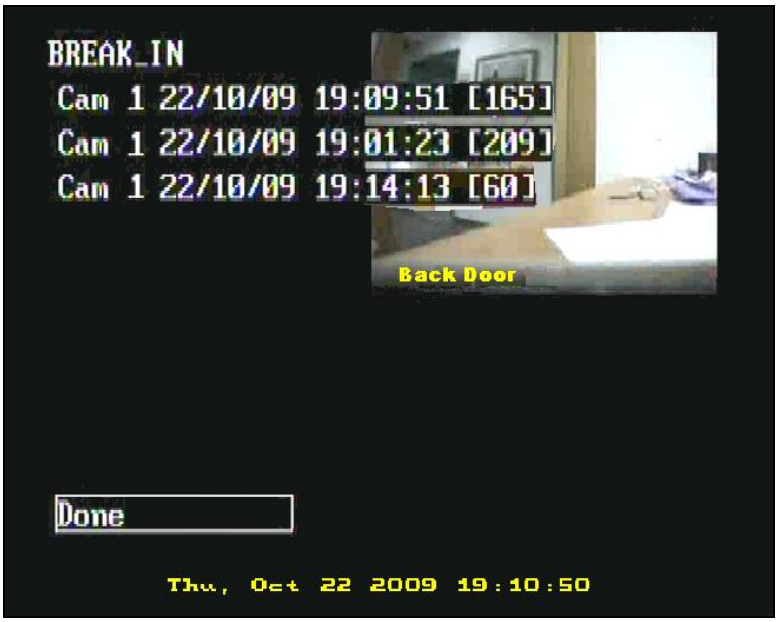


Figure 213: View screen

Playing the Edition

If you want to see the current contents of the edition, you can play the items on the monitor.

To play the items in the edition:

- In the **Edition** menu, select **Play**. The items in the edition are played on the screen.

Downloading the Edition

Once you have finished adding items to the edition, you can download the edition to your FTP server. The items in the edition are all inserted into a single file, in *srv* format (SerVision's proprietary video format, which can be played by any SerVision video player), with the name that is currently defined for the edition, and downloaded to the FTP server defined in the unit's configuration in the **FTP** screen (see *FTP Server Settings*, page 71).

To download the current contents of the edition:

1. In the **Edition** menu, select **Download**. The **Download** screen opens.

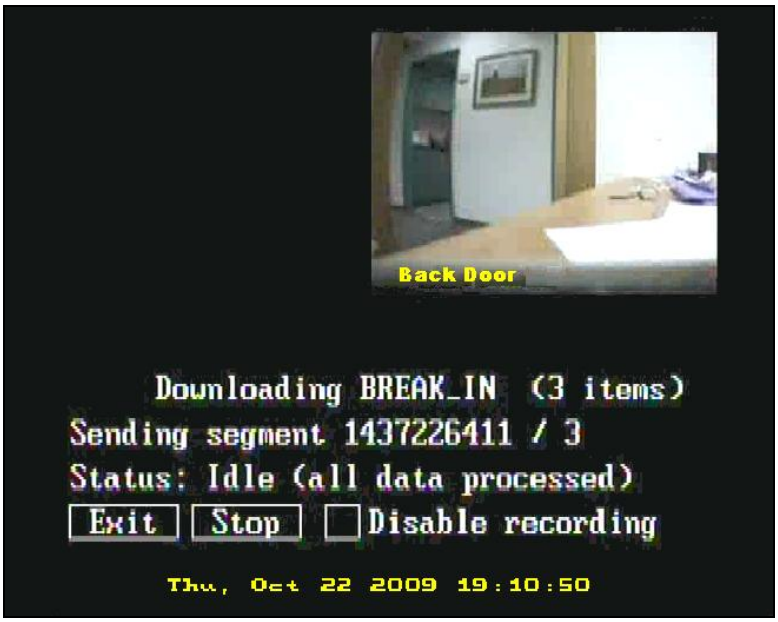


Figure 214: Download screen

2. If you want to stop all video recording during the download, select **Disable recording**.

   Note: Selecting this option will reduce the time required for downloading, but, obviously, with the risk that important events will not be recorded. For additional information, see *Download Optimizations*, page 20.

3. Select **Start**. The current contents of the edition are downloaded to the FTP server.

Clearing the Edition

You can remove all of the items from the edition. This is useful, for example, when you have finished downloading the current edition and want to begin creating a new one.

➪ *To remove all of the items from the edition:*

- In the **Edition** menu, select **Clear**. The list is cleared, and the **Clear** screen appears and displays the message, **No items**.

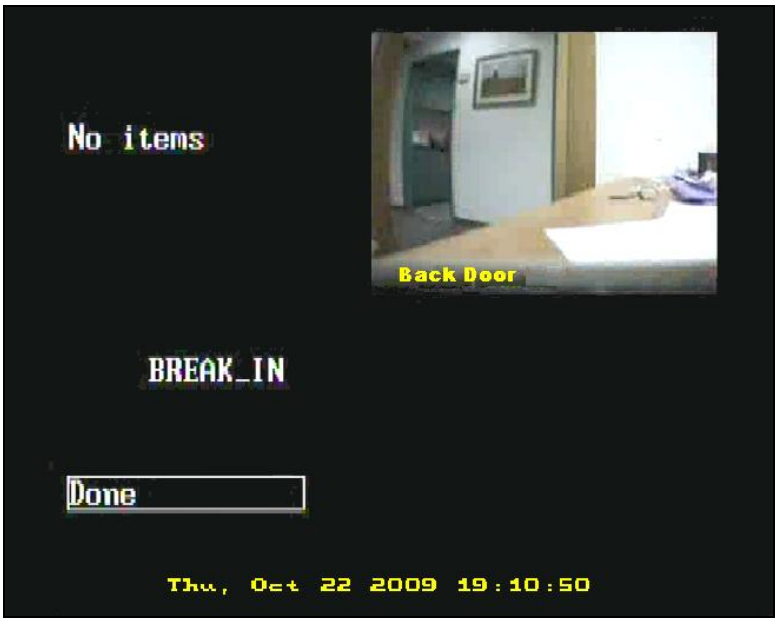


Figure 215: Clear screen

Note: To return to the **Edition** menu, select **Done**.

Configuring Display Options

The default display options are defined in the unit's configuration utility. You can modify these settings using the **Config** menu, and you can save the new settings in the unit's configuration.

The **Config** menu provides access to three screens:

- **Picture Params screen:** Sets the brightness and contrast of each camera
- **TV-Out Params screen:** Sets the loop interval for the full-screen display that switches from camera to camera, activates and deactivates the screen saver, and sets the timeout for the screen saver
- **OSD Params screen:** Configures the on-screen display (OSD) of the camera name and of the timestamp for recorded video

➪ *To open the Config menu:*

- In the main monitor menu, select **Config**.

Figure 216: Config menu

Adjusting Camera Brightness and Contrast

Initial camera brightness and contrast settings are set in the configuration utility (see *Configuring Camera* Settings, page 83). You can modify these settings on the monitor, and, if you wish, save the new settings to the unit's configuration.

NOTE: Changing these parameters immediately affects all the video streams from the relevant camera, both live and recorded, as explained below (see step 5, page 191).

To modify the brightness or contrast of a camera:

1. In the **Config** menu, select **Picture Params**. The **Picture Params** screen opens:

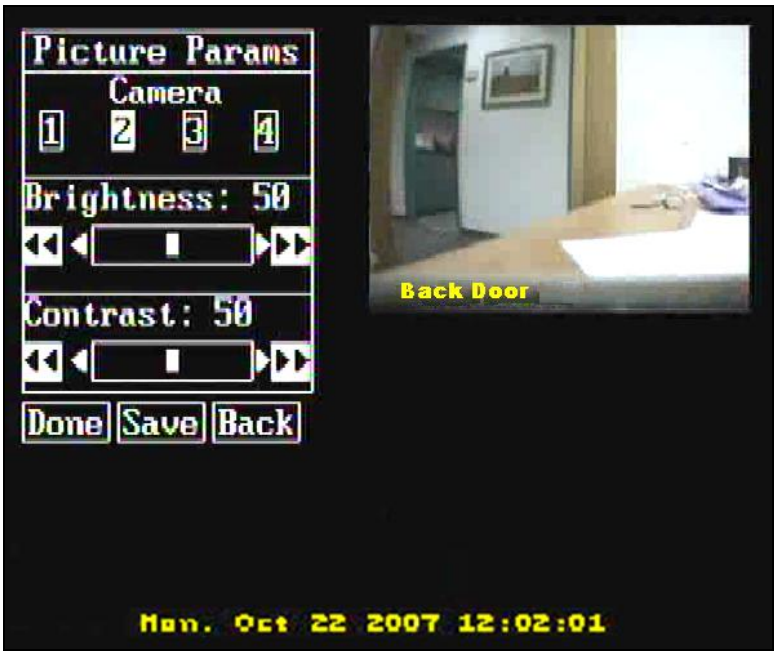


Figure 217: Picture Params screen

2. Under **Camera**, select the number of the camera whose settings you want to modify. Video from this camera is displayed in the upper-right corner of the screen.
3. Under **Brightness,** select the arrows to the right or left of the slider bar to adjust the brightness, as follows:
   - **Single arrows – and :** Adjust the brightness in small increments.
   - **Double arrows – and :** Adjust the brightness in large increments.

   The camera settings are changed, and the video displayed in the camera pane in the upper left of the screen changes accordingly.
4. Under **Contrast**, select the arrows to the right or left of the slider to adjust the contrast, as described in step 3 above.

   The camera settings are changed, and the video displayed in the camera pane in the upper left of the screen changes accordingly.
5. When the brightness and contrast are set as you want them to be, exit the menu by selecting one of the following buttons:
   - **Done:** Return to live video display. The settings remain in effect until they are manually changed again or until the Video Gateway restarts. When the unit restarts, the previous settings are implemented again.
   - **Save:** Save the settings on the Video Gateway. The next time the unit restarts, the unit's configuration is updated with the new settings. The settings remain in effect until they are manually changed again, either on the monitor or in the configuration utility.
   - **Back:** Return to the **Config** menu. The settings remain in effect until they are manually changed again or until the Video Gateway restarts. When the unit restarts, the previous settings are implemented again.

Adjusting Loop Interval and Screen Saver Settings

Initial loop-interval and screen-saver settings are set in the configuration utility (see *Configuring a CCTV Monitor* (TV-Out), page 28). You can modify these settings on the monitor, and, if you wish, save the new settings to the unit's configuration.

To modify the loop interval and screen saver settings:

1. In the **Config** menu, select **TV-Out Params**. The **TV-Out Params** screen opens:

Figure 218: TV-Out Params screen

2. Under **Switch Delay**, select the up arrow to the left of the field or the down arrow to the right of the field to modify the loop interval. This value only affects the full-screen rotating display. This value indicates how many seconds the display will remain on each camera before switching to the next camera when the rotating display is active.

3. If you want to activate the screen saver, under **Screen Saver**, select **Enabled**. The **Timeout** field is added to the screen, and displays the current timeout value in hours and minutes (HH:MM format):

Figure 219: Screen Saver enabled

4. Under **Timeout**, select the up and down arrows (and) to specify the hours and minutes of the screen-saver timeout. The screen saver is activated when the mouse has not been moved for this amount of time.

5. When you are finished configuring the switch delay and screen saver settings, exit the menu by selecting one of the following buttons:

   - **Done:** Return to live video display. The settings remain in effect until they are manually changed again or until the Video Gateway restarts. When the unit restarts, the previous settings are implemented again.
   - **Save:** Save the settings on the Video Gateway. The next time the unit restarts, the unit's configuration is updated with the new settings. The settings remain in effect until they are manually changed again, either on the monitor or in the configuration utility.
   - **Back:** Return to the **Config** menu. The settings remain in effect until they are manually changed again or until the Video Gateway restarts. When the unit restarts, the previous settings are implemented again.

Adjusting On-Screen Information Display

The On-Screen Display (OSD) options control how information is displayed in the video panes. Each pane can have one or two banners superimposed on the video:

- **Lower banner:** When displayed, this banner indicates the name of the camera whose video is displayed in the pane. The name can be displayed as it appears in the configuration utility – for example, "Back Door" – or it can simply be the camera number – for example, "Camera 1."
- **Upper banner:** For camera panes in which recorded video is being played, this banner can provide a timestamp, indicating the date and time at which the recording was made.

NOTE: Banners require a lot of system resources. If your system appears overloaded, try removing them.

The color of the lettering of the banners can be configured to maximize its visibility.

Figure 220: Camera pane with Timestamp and Camera Name banners displayed (full-screen camera pane)

Initial OSD settings are defined in the configuration utility (see *Configuring a CCTV Monitor* (TV-Out), page 28). You can modify these settings on the monitor, and, if you wish, save the new settings to the unit's configuration.

NOTE: Only the five standard banner colors (yellow, orange, black, blue, and red) can be selected directly on the monitor. If you want to select a custom color, you must do so through the unit's configuration utility. For additional information, see *Configuring a CCTV Monitor (TV-Out)*, page 28.

To modify the OSD settings:

1. In the **Config** menu, select **OSD Params**. The **OSD Params** screen opens, and lists the various banner display options. A checkbox beside each option indicates whether it is turned on or off (indicates the option is on; indicates it is off).

Figure 221: OSD Params screen

2. Select the checkbox beside an option to turn it on or off, as follows:

Option	Description
Camera Name (live)	Display the name of the camera in live video camera panes. The name of the camera, as it appears in the Video Gateway's configuration, is displayed unless **Camera Number** (see below) is also selected.
Camera Name (playback)	Display the name of the camera in recorded video camera panes. The name of the camera, as it appears in the Video Gateway's configuration, is displayed unless **Camera Number** (see below) is also selected.
Timestamp	Display the date and time of recorded video.
Camera Number	When camera names are displayed, display them as *Camera #x*, rather than the name of the camera as it appears in the configuration. This option is recommended if the configured name of the camera contains non-English characters, because these characters will not display properly on the monitor. **Note:** If the **Camera Name** display is not turned on, this option has no affect.

3. If you want to select a different banner color, select **Colors**. The color selection menu opens.

Figure 222: Color selection menu

4. Select the desired color. The banners are displayed in the selected color.

Figure 223: Blue banner

5. When you have selected the banner color you want, exit the color selection menu by selecting one of the following buttons:

   - **Done:** Return to live video display. The settings remain in effect until they are manually changed again or until the Video Gateway restarts. When the unit restarts, the previous settings are implemented again.
   - **Save:** Save the settings on the Video Gateway. The next time the unit restarts, the unit's configuration is updated with the new settings. The settings remain in effect until they are manually changed again, either on the monitor or in the configuration utility.
   - **Back:** Return to the **Config** menu. The settings remain in effect until they are manually changed again or until the Video Gateway restarts. When the unit restarts, the previous settings are implemented again.

Viewing System Information on the Monitor

You can view the following system information on the monitor:

- Name of the unit
- Main private IP of the unit
- Secondary (zero-conf) private IP of the unit
- Net mask
- Firmware version

To view system information:

- In the main monitor menu, select **Sys info**. The **System Information** screen opens:

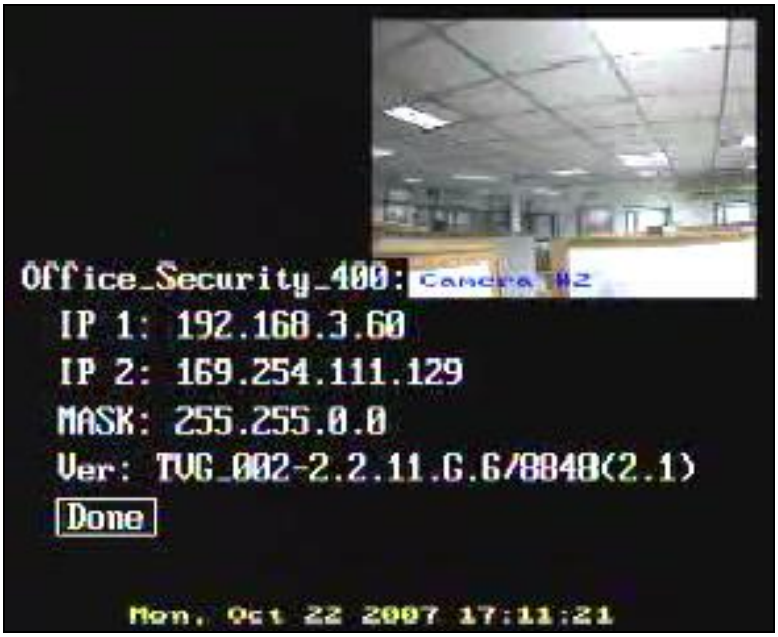


Figure 224: System Information screen

Using PTZ Controls

If cameras with PTZ controllers are connected to the Video Gateway, and the controllers are connected to the unit and activated in the unit's configuration, you can perform the following tasks on the monitor:

- Move the cameras using all the supported features of the camera: pan, tilt, and zoom
- Select and save a preset location
- Move the camera to a preset location

To use PTZ controls:

1. In the main monitor menu, select **PTZ**. The **PTZ** menu opens.

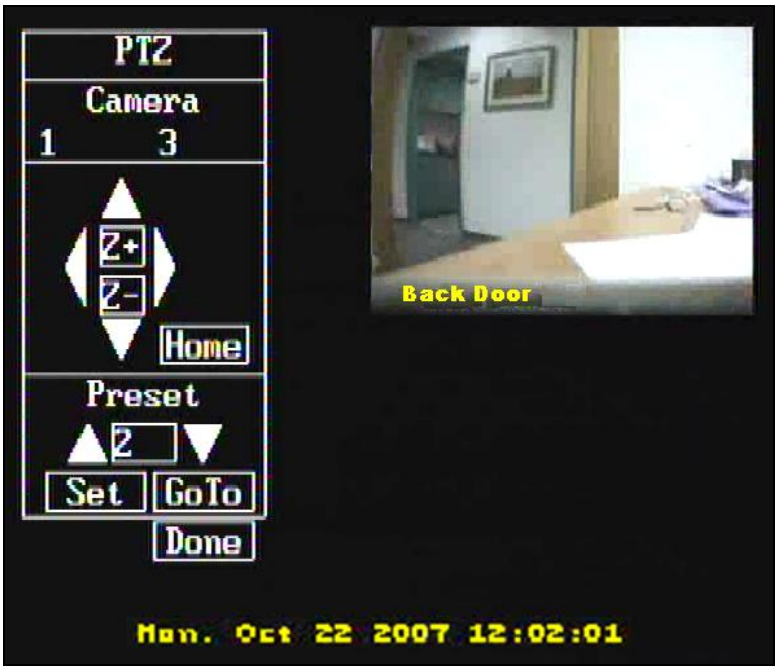


Figure 225: PTZ menu

2. Under **Camera**, select the number of the camera whose PTZ controls you want to use. For example, select **1** to control Camera #1.

   Note: The list of cameras only includes cameras with PTZ capabilities that are configured to appear in the TV-Out display (see *Configuring a CCTV Monitor (TV-Out)*, page 28).

3. To move the selected camera, select the controls as follows:

Control	Description
	Tilt the camera up
	Zoom in
	Zoom out
	Tilt the camera down
	Pan to the right
	Pan to the left
	Move to the home position of the camera

4. To move to a preset location, under **Preset**, click/tap the **Up** and **Down** arrows (and) until the number of the desired preset is displayed, and then select **Go To**. The camera moves to the selected preset location (if it is already assigned on the camera).

5. To set a preset:

   - Use the navigation controls to direct the camera to the desired location, as described in step 3.

- Under **Preset**, click/tap the **Up** and **Down** arrows (and) until the number you want to assign to the preset is displayed.
- Select **Set**.

The location is assigned to the preset number.

Recording Status Display

If the unit was configured to display the system's recording status in the monitor (see *Display Recording Status*, page 31), the status is displayed in the lower-right corner of the screen. The status information indicates whether video recording is functioning properly and, if it is, displays the current recording status of each camera.

When recording is functioning properly, a status message based on the following template is displayed:

```
HD:OK REC 0[WP:]X0 1[WP:]X1 2[WP:]X2 3[WP:]X3
```

The template contains the following items:

Item	Description
HD:OK	Hard drive is functioning properly (status: OK)
REC	Recording is functioning properly
0[WP:]X0	Camera 1 recording status
1[WP:]X1	Camera 2 recording status
2[WP:]X2	Camera 3 recording status
3[WP:]X3	Camera 4 recording status

The recording status displayed for each camera has two parts:

- **WP:** appears if write protection is enabled for the camera. Otherwise, it does not appear.
- **Xi:** is the current recording status of the camera. It can be one of the following values:

Recording Status	Description
N	No recording
C	Continuous recording
T	Event-triggered recording: recording is not currently underway
W	Event-triggered recording: recording of the pre-alarm part is underway
w	Event-triggered recording: recording of the Event, and/or of the post-alarm part, is underway

For example, **`HD:OK REC 0C 1WP:C 2T 3N`** means that four cameras are connected to the unit, all four are recording as configured, and their recording statuses are as follows:

- Camera 1: Continuous
- Camera 2: Continuous and write-protected
- Camera 3: Event-triggered (no recording is underway)
- Camera 4: No recording

NOTE: For information about configuring recording settings, see *Video Recording Settings*, page 96.

When recording is not taking place, either because the recorder is being initialized or because of an error, one of the following status messages is displayed:

Status Message	Description
HD:OK REC:starting	Recording is being initialized
HD:ERR	Hard drive error: The hard drive could not be initialized.
HD:OK REC:ERR init	Recording initialization error: The hard drive was initialized, but recording could not be initialized. This error indicates that there were bad parameters, bad sectors, etc.
HD:OK REC:ERR buf	Error allocating buffers for recording
HD:OK REC:ERR time	Invalid system time: Recording is disabled, and will restart when the time is set, either via the network or via GPS (on MVG and CVG-M units)

Appendix B: LAN Settings

All Video Gateways can connect to a local network (LAN) via an Ethernet cable. When a Video Gateway unit is connected to a LAN, it can connect to other networks through the LAN. For example, if the LAN is connected to the internet, the Video Gateway can connect to the internet through the LAN. This connection enables to Video Gateway to send video and other data to client devices over the internet. Some Video Gateway models can connect to cellular and WiFi networks as well as LANs.

When a Video Gateway unit is connected to a network, it is assigned a *local* IP address within that network. Units that are connected to more than one network simultaneously can have more than one IP address at a time – one on each network to which they are connected. The IP of the unit on each network must conform to the requirements of that network.

In order to connect *to* a Video Gateway unit from a client application that is not on the same local network, you must use the *public* IP address of the unit – the address that is assigned to the network's gateway (router) on the external network. In addition, port forwarding for the unit must be set up on the network gateway in order for a connection to be established.

About the Local IP Address of the Unit

The local IP address of the unit identifies it within the LAN. It can be static – a fixed address that is assigned manually in the unit's configuration – or *dynamic* – assigned by a DHCP server on the LAN (see *LAN Settings*, page 38). If the primary local IP used by the Video Gateway is dynamic, this means that it may be assigned a different IP address each time it is turned on and connects to the local network. Whenever possible, it is recommended to assign a static IP to the Video Gateway.

Every unit has a factory-configured default static IP address, which appears on the sticker on the underside of the unit. Normally, this address is **`192.168.1.210`**. You can assign a different static IP address to the unit during the configuration process, or opt to use a dynamic IP address.

If the unit has a static IP address, a second IP address is also assigned to it automatically by the system; this address serves as a backup address through which the unit can be accessed if problems arise with the first IP address. The address is assigned using the *ZeroConf* protocol, and begins with **`169.254`** (for example, `169.254.2.56`); the last two values in the address vary depending on which ZeroConf addresses are available in the network.

About the Public IP Address of the Unit

The network gateway that connects the LAN to an external network such as the internet has two IP addresses: an internal IP address by which it is identified in the LAN, and an external IP address by which it is identified on the external network. If the external network is the internet, the IP is called a *public* IP. The public IP address of the network gateway is assigned to it by the internet service provider (ISP). To connect to the unit remotely – either using a client application or the configuration utility – you must connect using the gateway's public IP address and the port that was defined for the purpose on the gateway (see *Ports*, page 19).

In some cases, it is problematic to connect remotely to a network gateway because it either does not have a public IP address at all or the public IP address is dynamic. To ascertain whether your network gateway has a public IP address, and whether it is static or dynamic, contact your ISP. If the ISP cannot allocate a public IP to the gateway, you must use a SerVision proxy service to connect to the unit remotely. If the ISP allocates a dynamic public IP address to the unit, you can use a *dynamic DNS* (DDNS) service to facilitate internet connections to the gateway. For additional information, see *Proxy and DDNS Settings*, page 53.

Appendix C: Networks Managed by SerVision Routers

MVG and UVG models have built-in SerVision routers. Each of these routers manages a small local network (LAN) that can include up to four devices – the Video Gateway itself and up to three other devices. For example, you could connect a PC and an IP-based cash box to the router, and they would all be part of the unit's local network.

The SerVision router makes it possible to connect MVG and UVG units to multiple networks – cable-based, cellular, and WiFi – at one time.

Because the router is part of both the internal LAN and one or more external networks, it has two types of IP addresses:

- **Local IP:** An IP address on the internal LAN. This IP address identifies the router within the network that it manages. It is static (fixed) and is `172.20.233.1`.
- **External IP:** An IP on each external network to which it is connected (cabled LAN, WiFi, and/or cellular). These IPs function as the public IP addresses of the Video Gateway units themselves, and are assigned by the system administrators of the relevant networks.

The router contains a DHCP server that can automatically assign IP addresses to devices that are plugged into its Ethernet ports. If you will not need to access a connected device remotely, you can configure the device to acquire its IP from this DHCP server. In this case, the device will be able to connect to the external network, but remote devices will not be able to access it. If you want to access the device remotely, you should manually configure its IP address and other network settings as described below (for information about how to configure the network settings of the device, consult the device's documentation), and set up port forwarding for the device as described under *Port Forwarding*, page 52.

NOTE: The Video Gateway component of the Video Gateway automatically connects to the router component when the unit starts up. The router's DHCP server assigns an IP address to the Video Gateway component and port forwarding is automatically configured.

Setting	Value
IP Address	Assign a static IP address to the device. The IP must be in the range `172.20.233.2` through `172.20.233.99`.
Mask	`255.255.255.0`
Gateway	`172.20.233.1`
DNS	`172.20.233.1`

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